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THE

RICHMOND AND LOUISVILLE

MEDICAL JOURNAL.

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MEDICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

"Qui Docet Discit."

ART. I.—TWO CASES SACCHARINE DIABETES. By J. L. CABELL, M.D., Professor of Physiology and Surgery, University of Virginia.

On the 15th of June, 1868, Jim —, a freedman, formerly a slave ot Mr. Peter McGhee, of Albemarle county, Virginia, consulted me on account of excessive diuresis and general debility. He stated that he was about fifty years of age, though looking much older, and that he had been sick for more than six months. During this time he had passed enormous quantities of urine, and his thirst had been so great that he often drank a quart of water at a time, which, as it seemed to him, he would almost immediately discharge from the bladder. When, as happened occasionally, some of his urine was spilt, it left upon the floor after partial evaporation a sweetish residuum. Before the winter was out he became so much debilitated as to be unable to leave his room. Under these circumstances some Rockbridge alum water was given to him by a member of the family with a vague hope that it might strengthen him. He is satisfied that he derived manifest and decided benefit in a great abatement of his thirst and in greatly augmenting strength.

Before taking it, he could scarcely walk or stand. He has now come eight miles on horseback, on a very hot day, with but slight fatigue and feels quite able to return home as soon as I shall dismiss him. He is confident that the daily amount of urine is also much reduced, though still very abundant. A specimen of urine brought to me by the patient had been passed three days before. It was submitted to Prof. J. W. Mallet, who reported acidity to be rather greater than that of normal urine—the specific gravity 1037, and the presence of sugar in large quantity to be unmistakeably determined by both the copper and the Bismuth tests. Moreover, fermentation having taken place spontaneously the specimen was found to be abundantly charged with torulæ.

The patient's diet had not been regulated. He had eaten without discrimination whatever he could get, and bread made of Indian corn meal had been his principal food.

I was struck with the apparent effect of the Rockbridge alum water. I had often experienced in my own person the marked effect of that mineral water in allaying thirst with a very trifling consumption of the article, and I was anxious to know whether the partial, but still decided, benefit experienced in this case depended on any other influence than that of a diminished ingestion of water. The patient was directed to take the mineral water systematically, half a tumbler four times a day, and as far as practicable to restrict himself to a diet consisting of bran cakes made according to the formula of Dr. Pamplin, of London, of fresh meat and of vegetables which contain little or no sugar or starch.

July 2. Jim called to-day. He brought no specimen of urine but passed less than two ounces; which, according to his statement, must have represented a total secretion for nearly two hours. The day was, however, exceedingly hot and the diaphoresis was profuse. He declares that the daily amount of urine is very much lessened, and that he is much better in every respect. The urine was found, however, to contain a notable quantity of sugar.

November 13. Jim brought to-day a specimen of urine of specific gravity 1035, and containing much less sugar than at last examination. He has not been constant in taking the mineral water or in adhering to the prescribed diet. His necessities have forced him to use corn bread from time to time: nevertheless, his improvement has continued.

January 29, 1869. Urine passed to-day has specific gravity of 1036 and contains a notable quantity of sugar, but he is otherwise better. He has gained flesh and strength. He works on a farm and says he could easily walk eight or ten miles without much fatigue.

I have not seen the patient since the date just specified, but within the present month (May, 1870), I have ascertained that he continues to labor on the farm and is in comfortable health.

Case 2. November 5, 1868. Mrs. —, aged sixty-one, has suffered for four or five months from distressing thirst and constantly increasing diuresis which is now excessive. Flesh and strength very much reduced, but appetite good. Urine passed this morning contained a large amount of sugar as ascertained by Trommer's test. A specimen was submitted to my colleague, Dr. J. W. Mallet, professor of Applied Chemistry, who employing successively Trommer's and other tests found an abundance of sugar.

The patient, who started this morning on a journey to a distant part of the State, was directed to take a quart of Rockbridge alum water a day in five or six doses and to adhere strictly to the diabetic diet. For convenience, the Rockbridge alum water was made by dissolving sixty grains of the "mass" in a gallon of rain or distilled water. The "mass" is prepared at the springs by evaporating the water in large pans. The residual salts, in the form of a greyish powder, are sold under the name of the "Rockbridge alum mass," which dissolved in distilled water, reproduces a mineral water apparently identical in taste and properties with the natural water.

November 11. The patient reports by letter of this date that she commenced treatment as to the mineral water on the 7th, and at once experienced a marked diminution of thirst. A day later she entered upon the diabetic regimen. The amount of urine is reduced from the previous enormous (but unmeasured) quantity to a little over two pints in the last twenty-four hours. The whole of this having been saved the mixed urine of the twenty-four hours, had a specific gravity of 1039, and exhibited the presence ot sugar. These characters were ascertained by means of specimen sent by express.

November 28. The patient has used the alum water and the bran cakes regularly. The urine of the last twenty-four hours *amounted to twenty-eight ounces only.* A specimen sent by express, has a specific gravity of 1022 and no sugar can be detected by either Trommer's test or the more delicate Bismuth test.

For the last few days the quantity of urine has varied between 24 and 28 ozs. Eyesight reported to be bad, and requiring the use of very much stronger (convex) glasses than the patient has heretofore found sufficient for useful vision.

December 11. Urine of the last twenty-four hours, about 25 ozs. with a specific gravity of 1023. A specimen sent by express exhibits a copious deposit of lithates which is redissolved on warming and shows a trace of sugar. Nothing said about eyesight, but general health reported as good.

December 25. Patient arrived yesterday. Urine of the last twenty-four hours amounts to 26 ozs., with sp. gr. 1023. A trace of sugar exhibited by prolonged boiling. A sediment of mucus contains octohedral crystals of oxalate of lime and some organic globules (apparently leucocytes).

From this date to January 18th, when the patient again went home, the daily quantity of urine varied between 15 oz. as a minimum, and 30 oz. as the maximum, the average approximating to the latter amount. The specific gravity varied between 1019 and 1027; the higher specific gravity corresponding with the minimum bulk. In one or two instances the Bismuth test gave a doubtful indication of a trace of sugar. The alum water was omitted from December 29th to January 6th, inclusively, after which its use was resumed. Between January 7th and 10th, bread made of unbolted flour was substituted for the bran cakes. A slight return of sugar in the urine followed this change of diet.

During this visit it was ascertained that the patient had a hypermetropia, which required convex glasses of twenty inches focal distance to focus parallel rays. This anomaly of refraction occurred rather suddenly, early in December, and was then apparently much worse than now. There is no cataractous opacity of the lens, and no amblyopia. The patient having been provided with an accurate urinometer, with test tubes and a good supply of test liquid, returned home, where for many months she kept a daily record of the quantity, specific gravity, and reaction of the urine. Between January 20th and September 20th, the amount varied between 18 and 40 ounces a day, once only reaching the latter figure and very seldom exceeding thirty ounces. The specific gravity varied between 1021 and 1030, the heavier specimens usually but not invariably coinciding with the minimum daily quantity. Eight or ten times the Bismuth test gave indications, sometimes doubtful, of a trace of sugar.

Early in March, pills of iron, quinia and strychnia were substituted for the alum water, and the patient thinks that they were beneficial in imparting a feeling of increased strength and general comfort.

Early in July she went to the Virginia Hot Springs, where she remained a month, taking daily a thermal bath at a temperature of 102° to 104°. She derived manifest benefit from this course of bathing, and from this date an absolute cure may be reckoned. She spent August and September in travel. During the fall and winter all medicinal remedies were laid aside and much greater latitude in diet was allowed. She now uses bread made of unbolted flour in lieu of bran cakes, and occasionally takes ice cream, jellies, and other articles flavored with sugar. The manifest hypermetropia has disappeared—the appetite is regular and not excessive—thirst normal. She has gained flesh and strength; in a word, her general health seems to be fully restored.

The foregoing reports are given to the profession with the view of inviting attention to a remedy which is believed to have been an efficient agent in the apparent cure of the second case and in relieving, in a marked degree, the other case in which this remedy was used in a very irregular manner, under the disadvantages of a want of proper diet and other auxiliary means.

It will be observed that a preparation of iron, quinine and strychnia was employed in the second case, and that there was reason to believe that it proved beneficial. The most obvious and decided benefit resulted from the use of thermal baths, but prior to the use of either of these remedies, the urine had been reduced in quantity to the normal average per diem and the sugar had disappeared except only occasionly when merely a trace could be detected. This result must have been due either to the alum water or to the rigorous exclusion of sugar and starch from the diet. Doubtless the proper regulation of diet is of the first importance, but such a regimen could scarcely of itself have produced so prompt and decided an effect in reducing the quantity of urine and in correcting the tendency to the promotion of diabetic sugar.

ART. II.—SOME ACCOUNT OF AN EPIDEMIC OF ROSEOLA, AT PRESENT PREVAILING IN CENTRAL KENTUCKY. (Read before the Boyle County Medical Society on Tuesday, May 10, 1870.) By JOHN D. JACKSON, M.D., of Danville, Ky.

On Monday, April 12, 1870, while visiting the family of Mr. W., of Danville, to see one of its inmates, the mother of the household asked me to examine her little girl, æt. four years. She was not at all suffering, was indeed at that moment playing in the room, but had broken out the day previous with a peculiar eruption, which had gone through the family of little ones, all having had it excepting the subject of present observation, though none of them had been compelled to stop school because of it.

On examining her carefully, I found her face covered from the roots of the hair of the scalp down, as also the neck, arms, body and legs, with a minute, punctated, thickly sown, light red, slightly elevated, and pretty generally diffused eruption, which would for an instant disappear on pressure. Its general aspect, was very much that of measles, there was, however, no distribution of rash anywhere in crescentic patches on the closest observation. The eruption could scarcely be said to be visible in the roof of the mouth, though the muciparous glands over the hard and soft palate, were punctately prominent. The tonsils were neither inflamed nor enlarged. The eyes were not red or watery, nor was the nose affected.

The cervical glands were enlarged. Pulse 100 standing up, temperature 98½. The patient was observed to be somewhat annoyed by itching of the skin. The eruption had remained out upon the other children three or four days, by which time it had gradually disappeared, they being subjected during the time to no treatment whatever. I saw this case no more, but subsequently learned from the mother, that the eruption disappeared the third day as it had done with her other children, without any special sequelæ.

April 18. Saw Frank J., æt. six, who, without any premonitory symptoms whatever, had broken out the day previously with an eruption similar in all respects to that in the case above described. The itching was rather more than in the patient last mentioned. The appetite was not at all impaired and he was only confined to the house because of the dampness and coolness of the weather. His respiration was 20 to the minute, pulse 106, temperature 99. The eruption continued out three days, and terminated by a slight furfuraceous desquamation.

May 4. Saw Anna J., a little girl of nine years, belonging to the same family. Eruption appeared without any observable prodromata. Face was a good deal swollen on the first appearance of the eruption. Glands of the neck not swollen, pulse 94, temperature 98. The eruption continued out three days.

May 5. Saw Julia J., of the same family. The eruption appeared as in the last case, without any appreciable signs ushering it in, the first thing attracting attention to the case. being the eruption itself, the presence of which indeed she was not conscious, until her mother attracted her attention to it. Her face was thickly broken out to the roots of her hair, the cheeks being more prominently punctated, and of a deeper red than the rest of the countenance; a close examination showed no vesicles, but among the tâches were some prominent papules (she has a fair, perfectly smooth skin when well) over the neck and arms, the eruption was simply maculated, without vesicles or papules, and shaded less deeply red than on the face. While the surface of the face was slightly rough to the feel, that of the neck and arms was not at all so. Pressure left a white spot for two or three seconds, the discoloration then returning. Unlike her sister, there had been no swelling of the face. The itching was but slight. The tongue looked natural, there was no swelling or special redness of the tonsils, but the muciparous glands of the root of the mouth exhibited the same prominence and evidence of hypersecretion as in the case above mentioned. No marked enlargement of cervical glands. No impairment of appetite or derangement of bowels existed. Pulse 82, temperature 100.

The mother says that her three other children all had the eruption during January ult., it running through the same course as I had observed it in the three instances above recorded. Measles had previously been in the family, and all of her older children had had it.

A very intelligent lady, whose son I was attending recently for an attack of asthma—told me that this eruptive disease had, during the latter part of the winter, passed through her family, each of her five children being successively attacked, though none were sick enough to require the attendance of a medical man. As in the above cases, it commenced without any marked prodromata, and remained out three days. I should, however, make an exception as to the premonitious, for she said that in every case, on the day preceeding the coming out of the eruption, she had noticed the glands of the necks of the children, to become markedly enlarged. So constant was this, that one day being on a visit to one of her lady friends, and the mother expressing some anxiety about one of her children who was then complaining, she observed an enlargement of the glands, and predicted the advent of the eruption next day, which indeed the sequel verified. The enlargement would subside shortly after the disappearance of the eruption.

Commentary.—In my opinion, the eruption in the cases above recorded, was roseola, and I have learned that during my absence the past winter, an eruption of the same or similar character, prevailed extensively in this immediate vicinity, as indeed it is now doing in the southern portion of Lincoln county, in and around Hustonsville, as it has done in Harrodsburg, Mercer county, in Garrard county, and for aught that I know to the contrary, in many other of the adjacent counties.

There are a few points in the present epidemic, which as far as my field of observation and inquiry has extended, make it a rather unusual one. As yet, I have not heard of a single instance in which an adult has been attacked. The attacks have been more nearly utterly free from premonitory symptoms, or prodromic signs ushering them in, than is customary in roseola, and the duration of the eruption has been more regularly uniform, in every instance in which I have seen it, or in which the observations of others upon which I could rely, have been reported to me, continuing out just three days; and I have not yet seen or heard of a case in which there was a second attack, or a fresh recurrence of the eruption within a week or ten days after subsidence, as is not unfrequently the case in roseola.

Its appearance in some familes in which the first case would be that of one of the children who had been going to a school in which it was prevailing among the scholars, and then those who had all the while been running at home having it in succession, is a strong argument in behalf of its contagiousness, though Trousseau is the only author I have met with, but has denied outright the probability of propagation by contagion of roseola.

Roseola, like varicella, claims the attention of the physicians, not from its importance *per se*, but its relations to other far more dangerous maladies, with which it is liable to be confounded: e. g.—a child having had roseola, and the physician mistaking it for measles or scarlatina, as has been done times without number, the parents supposing their little charge to have had the contagious affection to which they knew that by rule, children are but once in life susceptible, have sometimes, subsequently, unnecessarily exposed the child to contagion, and fatal results followed; measles or scarlatina in the meanwhile, getting the reputation of attacking individuals a second time, more frequently than is correct. On the other hand, it has not so rarely been the case, that a family with roseola has been under the impression that scarlatina or measles was the trouble, and they and their friends suffered much anxiety, and all the inconveniences of a partial isolation in consequence.

Dr. Geo. B. Wood has most frequently noticed the affection during epidemics of measles and scarlatina, under these circumstances, the difficulties of diagnosis must necessarily become increased. During the prevalence of the present epidemic, (within the past two months), we have seen one case of undoubted scarlatina in Lincoln county, and one case of measles in Danville. In each case, however, the affection was directly traceable to contagion imbibed abroad. In the former case, the patient having just returned from a visit to some relations in Fayette county, in whose family there had been scarlet fever, and the patient with measles had ten days previously come up from the South, and was part of his journey sitting in the same railway car, and adjacent to a boy broken out with measles. We have not seen or heard of any other cases.

While in the great majority of instances, we believe that roseola ought to be readily diagnosticated by the educated physician, yet we do not doubt the existence of numbers of cases, in which the most astute would long hesitate to pronounce judgment: e. g., let a patient be coincidently affected with roseola and tonsillitis, or coryza, not at all unlikely complications by the way, at certain seasons of the year, and if the rash has a particular character of development simulating scarlatina or measles, as it undoubtedly occasionally has, a survey of the ground over which the patient has gone after the subsidence of the disease, will alone enable us to from an opinion. Our first case, had the little patient been suffering with a catarrhal attack when the eruption came out, would have passed pretty current (if we except one point in making a diagnosis to which we shall allude hereafter), for a case of measles just being fully developed, or commencing to subside. The third case, had pharyngitis with tonsillitis coincidently existed, would have been as readily pronounced scarlatina.

Writers are not perfectly uniform in their description of the normal characteristics of the affection. Guersant says, the skin is not so red as in scarlatina, but is redder than in measles, and he says, that it is without wheals or papules*. In three of our cases, the eruption was fainter than that of well characterized measles when fully out. In the one case, the redness of the face was sufficiently deep to have at a glance been mistaken for scarlatina, and in this and another case, a close observation showed some papules. In our second case, we noticed that whenever the patient scratched, that there at once arose and remained out for a few minutes, prominent wheals, like those of urticaria. Some authors speak of the non-existence of desquamation as being characteristic. In one of our cases, desquamation though slight, was yet as clearly marked, as we sometimes see it in mild cases of measles. It cannot be looked upon as a very strongly dividing line between this latter affection and roseola, since Sir Wm. Jenner has said, in a certain number of cases of measles the efflorescence is slight, and the desquamation almost nil, but he declares that even in these cases, after the eruption may have vanished, and the patient become convalescent, if we look closely around the roots of the nails, that we can always see the remains of a closing furfuraceous desquamation. Dr. H. Beigel, describes it as being independent of epidemic influences. The epidemic now existing, proves him incorrect.

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*La rusgeole est contagieuse, la roseole ne l'est point; les tàches dans cette derniere sont plus larges et plus irregulieres que celles de la rougeole.—Guersant in Dict. de Med.

Our observations above recorded, are limited to but four cases, entirely too small a number from which to draw more than partial conclusions, but should future observations show the temperature in all cases of roseola to be no higher than in those we have recorded, it would in all otherwise doubtful cases, at once settle any doubts between it and the presence of scarlatina or measles. We do not recollect of observing in the records of others, any allusion to the temperature, but we hope that attention being drawn to it, those who in future may have the opportunity of studying such cases, will not neglect to make observations.

It is a question of at least some scientific interest, as to the origin, and direction of propagation of the present epidemic: whether it has arisen in our midst and is now spreading excentrically, or whether we have simply been in the line of its Eastern, Western, Northern or Southern march. Did every county in the State have a Medical Society, and its members carefully observe, record, and deposit within their archives, observations of all diseases occurring in their midst possessing anything of interest, the question would be susceptible of easy solution. As it is, we can only conjecture.

We cannot close our desultory remarks, without an allusion to the great diversity existing among authorities, with reference to the nomenclature of this affection and measles. We do not have in view the seven specific varieties defined by Willan as roseola æstiva. R. autumnalis, R. annulata, R. infantilis, R. variolosa, R. vaccinia, and R. miliaris; a species of useless and unscientific refinement as we believe, which has been increased by other authorities to the number of twelve; but rather allude to the variety in the generic names. While most of the English writers describe it under the name roseola, along with its synonymes rose-rash, reserving the name roseola for measles, yet Aitkin has described, under the heading rubeola, an affection entirely different from either measles or roseola, while Trousseau has under the generic title of rubeola, (the word being retained literally by his translator, Dr. Cormack, in the volume recently issued under the auspices of the "New-Sydenham Society,") confined himself to the accurate description of roseola.

The descrepancies and confusion liable to follow from such diversity, only the more make us hope that the "World's Medical Congress" inaugurated at Paris, three years ago, may so grow in grace, wisdom, and influence, that the day may not be far distant, when we shall see it assembling in ecumenical council, to give one universal, infallible nomenclature to the medical world.*

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*Since the above was written we have incidentally learned of a few cases occurring in the eastern portion of Boyle county, in which adults were attacked, and the disease ushered in with vomiting and pain in the back.

We have also learned of adults being attacked in Lancaster, Garrard county, in which place it is now prevailing. It seems, according to information received, to be there marked by a three days continuance of the eruption, as it has done here, and I have also been informed, that it has been especially characterized there by enlargement of the cervical glands, just a day or so prior to the development of the rash. I had not seen or heard, on inquiry, of any individuals having been attacked twice, a phenomenon not very uncommon in roseola, but while engaged in transcribing this paper, there was sent to my office, Carrie W., æt. four, a sister of the patient whose case above I have first described. She had had the eruption previously to her sister, and is now again broken out perfectly regularly. She is not suffering at all, nor was the rash ushered in by any noticeable symptoms, but she was sent to me for examination because of the mystery to her parents of a second attack. The cervical glands are slightly enlarged, pulse 110, temperature 99½. I am informed that her little sister, whose case I have already noted, has just had the eruption of a second attack to leave her, after continuing out three days, as it did on the first occasion.

Since reading the above paper before the Society, I have received the April No. of the Medical Times and Gazette (London) containing a continuation of the very interesting series of "*Clinical Observations on the Temperature of Disease*," by Dr. Fox, of the Bristol Infirmary, England. Under the head of *Rubeola Notha*, he speaks of roseola, and says it "seems to be accompanied by a higher febrile condition in England than in Germany. Wunderlich states that there is no fever at all, or that it is very slight except in individual cases; and he suggests that these exceptions may depend on complications or on the tendency to variations of temperature peculiar to little children. English experience, however, is different from this. In the last five years, this disease has been prevalent in Clifton, on three different occasions; and the rule certainly is, that on the first two days of the disease, whilst the eruption is coming out and advancing to its maximum, the temperature is rather high. Case 28, is an example of the malady, but the temperature in this case, reached a somewhat higher point than is usual. More frequently, the highest point reached will be about 103°, and the maximum of temperature pretty closely corresponds to the maximum of eruption. It is a peculiar point in this disease, that, with so decided a pyrexial condition, children seldom feel ill when the eruption has once appeared. A temperature of 103° may cöexist with a good appetite, and with an absence of thirst, of headache, or any feeling of illness.

"The temperature reaches the acme on the second evening, either without a morning remission or with one of very small degree, and on the third day defervescence beings."

ART. III.—REPORT OF A CASE OF ACUTE MALARIAL TOXÆMIA; TOGETHER WITH REMARKS ON THE PATHOLOGY OF THE DISEASES OF MALARIAL ORIGIN.

(Read before the Selma Medical Society, October 14th, 1869, and ordered for publication in the Richmond and Louisville Medical Journal.) By H. S. Hudson, M.D., Selma, Alabama.

Mr. President: In December of last year, I took occasion to report three cases of this disease, occurring in my own practice, one of which was fatal; in that report, I then stated the pathology here more elaborately unfolded; then only inferred, now more clearly demonstrated; and while many of the deductions here made are new, and not, as yet, supported by the observations of others. I know of no facts which cannot be reconciled, with what is here stated of its pathology. I have taken this occasion, to embody in this report, new views of the pathology of the malarial diseases; which I hope will be found interesting to this society, and lead to renewed efforts to obtain a more intimate knowledge of their causation, pathology, prevention and cure.

I find that no mention is made of this type of malarial fever, in the works of Drs. Drake, Johnson, or McCullock. In a work written by Dr. Heustes, of Cahaba, Ala., published in the year 1825, is an account of an endemic fever which had prevailed in this country, bearing some systematic resemblance to it; it is there detailed, under the name of "billious remitting or endemic fever of 1821-2," and may be found at page 371; it is therefore not to be regarded as a new form of malarial disease, but as a reappearance of the endemic fever of 1821-2 accompanied perhaps with more pronounced, yet similar phenomena. I am the more persuaded of the truth of this statement, by a comparison of the symptoms which characterize it, with those which mark other types of fever, attributed to marsh miasm.

The history of the disease as it has prevailed since the year 1867, has been fully and lucidly detailed by Dr. R. F. Michel, in his monograph read before the Medical Association of the State of Alabama, and published in the July No. of that year, of the New Orleans Journal of Medicine, under the name of "hæmorrhagic malarial fever." For reasons, which appear to me good, I have preferred to regard it as one of the forms, or types, of malarial fever, which as a class may be embraced by the term acute malarial toxæmia.

What I have to say of its clinical features, will be confined to the report of the following case, which occurred in the practice of Dr. R. D. Jackson, under whose medical care the girl was during the attack. Dr. B. H.

Riggs and myself saw the case on Sunday morning, but suggested nothing likely to be beneficial to the patient, which Dr. Jackson had not already administered.

Clinical History. Sarah, Mulatto, age 13, has had two attacks of intermittent fever, during the summer, otherwise has been in good health.

Thursday, August 26th.—Had a chill about noon, followed by fever which passed off during the evening; took that night by direction of her mistress, a dose of blue mass, and next morning, quinine and a dose of castor oil and turpentine.

Friday, August 27.—Had another chill about 12 o'clock, A. M., soon after passed some dark colored urine, Dr. Jackson was then sent for and saw her about 4 o'clock P. M., at which time there was some febrile heat, had pain in her head and back, vomited bile occasionally complained of thirst, tongue dry, pulse 115, resp., 22.

Saturday, August 28.—Passed, urine of the same appearance as yesterday (reserved specimen No. 1 this morning, voided about eighteen hours after the first dark colored urine) pain in head and back more severe, vomited more frequently, thirst urgent; was restless, skin dry, but no sensible febrile heat, adnata lemon colored, pulse 125, respiration 25.

Sunday, August 29, 9 A. M.—Had not slept during the night, restlessness has increased, complained of being tired but was not suffering pain, countenance anxious, vomited frequently, a dark-blue grumous fluid, with green particles floating in it, latter looking like chopped spinach, bowels had been opened during the night, evacuations of a black color and tarry consistence, skin of normal temperature, passed urine of a dark color about the same as before, but of a dark inky hue. Pulse 140, deficient in volume, respiration 38. (Preserved specimen of urine, No. 2 this morning). 5 P. M. Patient worse, respiration and pulse were more rapid, vomiting was measurably abated, passed viscid urine of a greenish hue and almost black color. Thirst very urgent.

During the night following, the patient had occasional attacks of delirium, lasting a few minutes, these attacks ceased towards morning. No other symptoms supervened, until about 7, A. M., Monday, when with a few slight twitchings of the hands, the patient died. Specimen of urine No. 3, was collected Sunday night, and next morning forwarded to Prof. Joseph Jones, University of Louisiana for examination.

Autopsy.—Dr. B. H. Riggs and myself, present Dr. Jackson, seven hours after death; body not much emaciated; still warm about the thorax; skin bronzed; adnata lemoncolored; lips, gums and tongue white and bloodless; rigor mortis unusually great; tissues very firm; opened thoracic and abdominal cavities; muscles rather redder than usual; cellular tissue yellow; no blood followed the knife, and the visceral organs presented a blanched and colorless appearance, a remarkable absence of fluidity in every tissue, almost amounting to dryness; liver, color, size and consistence, natural; gall-bladder distended, with a dark greenish mass, about the consistence of blackberry jam; stomach full of fluid, similar in appearance to that previously vomited; kidneys, size two inches across the pelvis, four inches in length, weight three ounces six drachms, firm and a little dark-colored, cortical substance also darker than usual; lower part of the ilium contained fæcal matter, which stained linen yellow; colon empty; bladder contained about ten ounces of fluid, having the same appearance as that previously voided; lungs very pale, faintly marbled, crepitate on pressure and very light, much more so than usual; heart of natural appearance and size, firm and contracted, about an ounce of straw colored fluid in the pericardial sac; removed the left kidney, spleen, part of the liver, gall-bladder pressed, collected some blood from the liver and spleen; these were examined carefully at my office by Dr. C. J. Clark, Dr. B. H. Riggs and myself. I am also indebted to Drs. Clark and Riggs for assistance in the examination of the urine and blood, which are here recorded. These examinations were of the urine specimens 1, 2, and the blood from the liver and spleen. Specimen of urine No. 3, was sent to Prof. Joseph Jones, by whom a very complete examination of this fluid was made, the results of which are inserted in this report.

Physical and Chemical Examination of Urine and Blood. Urine specimen No. 1. Examination made about six hours after its discharge. Color, reddish-brown, not quite as dark as porter; sp. gr. 1018; faint acid reaction, has a urinous odor, deposits a copious brown precipitate about ⅙ the depth of the liquid; the clear liquid gives a brown deposit on boiling redissolved on addition of nitric acid and changed to a straw color; about one ounce was evaporated to dryness and residuum treated with boiling alcohol and found insoluble; residuum blackened and charred under the blowpipe, emitting the odor of burnt horn; Pettenkofer's test gave no indications of bile and no play of colors was observed on the addition of nitric acid; result, no bile, no albumen.

Subsequently parts of this specimen, (specimen No. 2), and the portal blood were sent by Dr. Riggs to Dr. R. F. Michel, of Montgomery, who, in his letter of reply, comfirmed the results here stated, finding "in specimen No. 1, no blood, no albumen, no bile." Urine specimen No. 2, sp. gr. 1015, color nearly black, has a dead inky hue, on standing does not become bright and clear, as did specimen No. 1; has a dense deposit, perhaps about 1-10 the depth of the liquid, an alkaline reaction and becomes turbid on boiling, precipitate not entirely dissolved on addition of nitric acid. Result.—Albumen present in small quantities; did not test for bile. Dr. Michel found bile present in it.

Microscopic Examination.—Urine specimen No. 1. The very copious sediment in this specimen was composed of epithelium and numerous granular particles imbedded in the gelatinous fluid, together with a few tube casts of the tubuli uriniferi. (I found two in an examination of the slides). Urine specimen No. 2. Deposit consists almost entirely of the dèbris of the blood cells, and appeared to consist of the shriveled cell membrane only—these were not aggregated, but floating freely in the surrounding fluid.

Examination of Blood.—The blood of both the liver and spleen were found to present evidence of extensive destruction of the red corpuscles, those that remained in the small amount of blood found in the body, were very pale and of every conceivable shape and size; not more than one-fourth were circular and of normal appearance. The serum was of a bright yellowish red color, nearly the color of the corpuscles of freshly drawn healthy blood.

Examination of Specimen of Urine No. 3, made by Prof. Joseph Jones.

"1st. *Physical Properties.*—The urine presented a dark greenish, black color, and resembled the dark viscid bile of some cases of congestive malarial fever· The fluid poured like diluted bile and the heavy sediment presented a ropy, viscid appearance and action, alike in all respects to thick bile. The odor was very peculiar and was unlike that of putrid urine and resembled that of decomposing bile and blood.

"2d. *Microscopical Characters.* Under a magnifying power of 430 diameters, the urine was found to contain numerous casts of the tubuli uriniferi; these casts were filled with crystals, and fragments, and granules of the coloring matter of the blood. (Hæmatin). A few altered blood corpuscles were seen in the fluid, but if they had ever been present in large numbers they had been destroyed by the mixture of urine and bile; some bile globules, and epithelium from the genito-urinary apparatus were also discerned. No microscopic plants were observed; if the vegetable origin of malarial fever be true, we should in such cases, above all others, observe the sporules and cells of the plants.

"3d. *Chemical Examination.*—Sp. gr. 1012; heat and nitric acid produced but slight coagulation, and the coagulum appeared to have been caused by the presence of the elements of blood. When evaporated the residuum resembled, in all respects, dark inspissated bile; under the microscope the concentrated and dried urine presented the characteristic globules and crystals of concentrated bile. When the concentrated and dried urine was treated with concentrated nitric acid, but very few crystals of the nitrate of urea were found. This important constituent of the urine was almost absent.

"As the results of this examination, therefore, we have a urine of low specific gravity, loaded with casts of the tubuli uriniferi, filled with Hæmatin; deficient in urea, abounding with biliary acids, coloring matter, and containing a small amount of albumen.

"I was astonished at the amount of bile contained in the specimen of urine and the solid matters of the urine appeared to be chiefly those of the bile.

"In many cases of congestive fever I have observed after death, local congestion of portions of the kidneys presenting a deep slate color upon the exterior and a bronze within, in which the blood had evidently stagnated and undergone marked changes. The Hæmatin settling in the capillaries and tubuli uriniferi."

Pathology.—A comparison of the symptoms and post-mortem appearance of the body in this case, and in others recorded elsewhere, with those of the bilious remittent of tropical climates, and malarial yellow fever, will leave no doubt on the mind as to the unity of causation of these diseases; be that cause what it may, gaseous emanations from the earth, putrid matter of animal and vegetable decomposition, or the enigmatical palmellæ of Dr. Salisbury; and while these diseases are not marked by a strict uniformity of symptoms, yet they are sufficiently so, to be embraced by the term acute malarial toxæmia.

There seems to be also an additional reason why these, and perhaps also some others of the forms of malarial disease, at present known by widely different names, should be grouped together; heretofore the primary lesion has not been observed as such, but rather as the effect of organic perturbations, and only recognised at all in the forms of chronic malarial toxæmia.

Frerich, long ago, pointed out the disorganized condition of the blood, and the deposition of pigment granules in the liver and spleen; and more recently, Dr. J. Forsyth Meigs, (Phil. Hosp. Rep., vol. 1868), has extended our knowledge of the pathology of the blood, in these diseases; yet, neither of these observers seem to have regarded this lesion of the blood corpuscles, as the primary lesion, in all the forms of malarial fevers.

Many reasons at once present themselves, on reflection, why this fact has been overlooked, but chiefly among these is, no doubt, the great difference of intensity of these diseases, while in all the secondary disorders of the visceral organs overshadow the lesion, upon which the disorder depends; again, the rapid retrograde metamorphosis, and excretion of the products of blood disintegration, leave nothing more than a deposit of a few scattered masses of the refractory coloring matter, in the liver and spleen; a result, from which we could not draw the just inference, that the destruction of the red corpuscles was the cause of the symptomatic phenomena of these diseases; in this form of malarial fever, so rapid and extensive a disorganization of the blood occurs, that some of its organic constituents appear in the urinary excretion, and so become objects for investigation during its progress.

The rapid and extensive destruction of the red corpuscles, and discharge of their contents into the liquor sanguinis, is the primary pathological lesion in this disease. This will be made apparent by comparing the facts observed in the clinical history, autopsy and microscopy of the case, here recorded. The autopsy revealed no lesion of the visceral organs, excepting that of inflammation of portions of the kidneys, an enlarged and dense spleen, (the increment of the latter seemed to be due as much to density as size), and an impacted gall bladder. The liver and kidneys, had no doubt continued to perform their functions to the last, neither the condition of these organs, the results of the chemical examination of the urine specimen No. 3, or the mode of dying, would indicate the reverse of this, as possible. The impacted biliary ducts prevented the discharge of bile into the duodenum, a condition, if persistent, which would have resulted in the destruction of the function of the liver; and the inflammatory action, might, in time, have involved the whole of the kidneys and destroyed these organs, but in this case, neither of these results had occurred, when the life of the organism became extinct from another cause. The amount of healthy blood remaining in the body, was *no longer able to supply the system with the oxygen necessary for life.*

The question naturally occurs, was the loss of blood due to a transudation of its components unaltered, and constituting it a true hæmorrhage, or was there a death of the blood in the vascular system, and the appearance in the urine of its débris, by the depurating action of the kidneys? That it was not the former, is clear, from the small amount of albumen present in the urine. That it was the latter, is proven by the presence of the hæmatin in the serum and urine, and the elimination of the hæmatin, by the kidneys, before the débris of the cell membrane appeared in the latter fluid. The serum obtained from a blistered surface, is of a bright red color and is due to the hæmatin it contains.

The microscope revealed the further fact, that what the liquor sanguinis had gained, the red corpuscles had lost, the latter were nearly colorless and shrivelled up; not more than one-fourth in the blood in this autopsy were circular, and even these were not of uniform size.

In two cases examined I have found the coloring matter of the blood in the urine before the appearance of the débris of the cells. In these cases the granular matter resembled that described by Dr. Meigs as having been found by him in the blood. The particles were seemingly entangled in masses of a transparent gelatinous fluid; gentle pressure upon the slide cover forced some of them out into the surrounding fluid. In all the subsequent discharges of urine in these cases, bile and the dèbris of the cells were found in addition to the hæmatin.

The appearance of the hæmatin in the urine is coincident with distressing pain in the lumbar regions, and sometimes the weight of the attack seems to fall on one kidney, to the comparative freedom from disease of the other.

According to Dr. Parkes, "blood pigment or hæmatin dissolved in the urine does not necessarily indicate local disease of rupture of vessels in part of the urinary organs; it must be regarded rather as a specially morbid condition of the blood, as is associated with septic poisons or profound cachectic diseases;" and Vogel asserts that the coloring matter of the urine is derived from the hæmatin of the red corpuscles, so that one of the normal function of the kidneys is to carry this substance out of the blood as fast as liberated during these retrograde changes which take place in that fluid.

In this very fatal disease, so rapid and extensive, a destruction of the red corpuscles is produced by malaria, that in four or five days sufficient of the blood is destroyed to produce death; many cases, however, do not proceed to this point before either the liver or kidneys, or perhaps both are so overwhelmed by the resulting dèbris of the corpuscles as to become sources of serious complications.

It would seem that the two great dangers to be apprehended in these organs, are from the attendant renal congestion or inflammation, which by destroying the kidneys, would poison the system by the retention in the blood of those products of tissue metamorphosis, which it is their function to excrete; and the occlusion of the biliary ducts, which condition, if persistent, must end in a cessation of the functions of the liver and consequent death by cholesteræmia.

The appearaace of the hæmatin in the urine is accompanied by an increase of the functional activity of the liver, and soon its redundant secretion is made manifest by its presence in the stomach; nausea and vomiting are constant phenomena.

To this important symptom, the redundancy of bile I desire specially to direct the thoughts of the profession, as I conceive that much error exists as to its cause and import in this and all other forms of malarial fevers. The composition of the red corpuscles is as follows: (Prof. Lehmann): water, 688.00; hæmatin, 16.75; globulin, 282.22; fat. extractives, etc., 12.93. It will be observed that the quantity of hæmatin is small in comparison with that of the globulin, while the latter also becomes a foreign substance in the circulating fluid by the disintegration of the red corpuscles.

Globulin is a substance resembling albumen, nearly of the same composition, and is one of the Protein compounds. The composition of the liquor sanguinis is as follows: (Prof. Lehmann): water, 902.90; fibrin, 4.05; albumen, 78,84; fat. extractives, etc., 14.21. The relative amount of corpuscles and serum in healthy blood, according to the highest authorities is about equal.

By comparing the composition of the red corpuscles with that of the liquor sanguinis, it will be observed that the quantity of the albuminous compound (globulin) in the red corpuscles is nearly four times as much as of albumen contained in the liquor sanguinis.

The presence of the protein compounds, in excess, has been ascertained by Nasse to greatly increase the secretion of bile. Bidder and Schmidt also state, that "the secretion is reduced to a minimum when a vegetable or fatty diet is consumed, while a pure flesh diet induces a very abundant secretion."

That the retrograde metamorphosis of tissue is one of the sources of this secretion has long been regarded as settled; its presence in the embryo at birth would seem to demonstrate the truth of this. Whatever, therefore, tends to increase the proportion of albumen in the serum of the blood, whether accelerated destruction of tissue or an exclusively animal diet, also increases the activity of the liver and consequently the amount of the biliary fluid.

By the destruction of the red corpuscles and discharge of the globulin into the liquor sanguinis we have produced in the circulating fluid, a large excess of the very pabulum of the bile; for while the total quantity of the albuminous compounds in the mass of the blood (corpuscles and serum) is not altered, yet as there is no reason to suppose that the red corpuscles are in any way functionally concerned in the production of bile, we must conclude that it is from the albuminous elements of the liquor sanguinis that the secretion is derived.

It may be said to be a maxim in physiology, that organs are stimulated to functional activity by the presence of those substances only which it is their special office to act upon, as for example, in the instances of food in the stomach, air in the lungs, urea in the blood of the renal artery. The liver cannot be supposed to constitute an exception to this law, one seemingly, to have been imposed upon every organic cell in the body.

In malarial diseases then we have first the destruction of the corpuscles and excess of the albuminous compounds in the liquor sanguinis; then increased functional action of the liver and excess of the biliary fluid, and this latter, notwithstanding that the normal source of the secretion, is principally the food and but to a limited extent the effete tissues; for the reason, that in the blood is formed in greater or less amount that which the food would ordinarily supply.

I would here say a word in defence of that much abused organ, the liver; no complaint is more common than that of a "bilious attack," and I think no very definite meaning is attached to this term, yet, whether the redundance of bile results from the ingestion of too much animal food or from the rapid and excessive destruction of tissue, we too often contend that evidence of hepatic perversity is *vitiated bile.* I am inclined to think that for much of this vitiated bile, the liver is not responsible, for it would seem to be a very malevolent propensity of the liver, if, upon every increased exertion of its functions it should, out of pure mischievousness vitiate its secretion. The other organs of the body seem to be admirably considerate of the welfare of the body, and it is but reasonable to infer that the liver is also.

In this form of malarial fever the enormous quantity of the biliary secretion poured out, is perhaps, the most marked and obvious phenomenon; throughout its whole course, unless the biliary ducts are closed by an exaggeration of the process of inspiration which normally takes place in the gall bladder, the nausea and vomiting occasioned by its presence in the stomach are most distressing and unmanageable.

The contents of the gall bladder, in this case, were inspissated bile and nothing more. On diluting it with water it was found entirely soluble, producing a clear yellow fluid, having an alkaline reaction; its viscidity would alone seem to be the cause of the reabsorption which produces the jaundiced or bronzed color of the integumentary tissues by preventing the proper discharge of bile into the duodenum, while the liver not being incapacitated from. performing its functions, and the supply of the albuminous blood increasing as the blood disorganization proceeds, the biliary fluid is either taken up by the absorbent vessels or is forced into the capillaries of the hepatic vein.

The increasing proportion of the bile in the urine is what we might expect to find, as the disease increases in intensity, and the tissues of the body become deluged with bile.

The natural tendency of this disease is to produce death by exhaustion early in the course of the attack; the nervous system is much prostrated and the complaint of being tired is sometimes paramount to all others, even while much muscular strength remains; this would seem to arise from the deficient oxggen carrying capacity of the blood, notwithstanding the greatly increased exertion of the lungs to supply this want of the system.

In conclusion, a few words as to the indications for the treatment of this disease.

1. As cinchona and quinia are recognized as antidotal to malaria, the early and free use of these remedies would seem to be positively indicated.

2d. That the danger of disorganization of the kidneys should be early combatted by measures calculated to relieve the congestion or inflammation of these organs. Free purgation and the prolonged and frequent use of the hot bath would, perhaps, best attain this object.

3d. That the frequent discharge of the contents of the gall bladder should be induced, perhaps purgation, especially if produced by mercurial preparations, and the exhibition of liquid food would best accomplish this. Bidder and Schmidt state that this viscus is emptied about two hours after a meal.

4th. That the absence of fluids and urgent thirst, point to the necessity of an abundant supply of whatever fluid can be administered, either by the mouth, rectum or the peripheral absorbent system, calculated to supply this want. Of other remedial measures, stimulation, general and local, would seem to be the one most needed.

[NOTE.—This excellent paper was received last October. It has been reserved until this period however, as it is at this season that the discase of which it treats is most often seen, and is of more immediate interest to the practitioner.—E. S. G.]

Art. IV.—The Relation of Hæmoptysis to Pulmonary Tuberculosis. A Clinical Lecture by Prof. Skoda, Vienna, Austria. (Translated* from the Wien Med. Pres., by Dr. Epstein, of Cincinnati, Ohio.)

Prof. Niemeyer has recently given an altogether different significance to hæmoptysis from that which was hitherto accorded to it. He derives the disease which follows the hæmoptysis from the attack itself; maintaining that it is just the remnant of blood left in the bronchi and alveoli of the lungs, which gives rise to a chronic inflammation, producing the febrile movements, and other phenomena of phthisis. But if such a sanguineous residuum in the finest bronchi and alveoli has really such an inflammatory influence as to evoke these phenomena, then it is but reasonable to expect that the same thing would take place in cases of hæmorrhage from cardiac disease. But, we observe nothing of the kind in such cases. When hæmoptysis occurs in an individual, whom we suspect to labor under phthisis and death supervenes, either in consequence of that hæmoptysis itself, or soon after, then, and as a rule, we find no kind of a bloody residuum in either the bronchi or alveoli. When death supervenes, however, upon hæmorrhage from cardiac disease, then we do find hæmorrhagic foci in the lungs. This infarctus hæmorrhagicus occurs very rarely in tuberculosis, but constantly in hæmoptysis from cardiac disease. Is such an infarctus evidence of a chronic inflammation? We do not find it. No doubt, a slight reaction does take place where blood remains accumulated, but this has the only effect of the blood undergoing the usual changes of coagulation and encystment, but it never advances to suppuration. Such an infarctus may remain for months and years; it gets constantly smaller, and may disappear, in time, altogether. The blood globules undergo that alteration from which a black pigment is developed, and then follows a fatty metamorphosis. The fluid parts of the blood are absorbed, the black pigment is left, and when the infarctus has lasted long, it gives rise to those black spots which we find in the lungs. This experience, therefore, which we have in regard to blood extravasated in the lungs, from cardiac diseases, is so little in harmony with the hypothesis of Niemeyer, that it justifies us in pronouncing the latter incorrect.

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*I have rarely encountered so many difficulties and obscurities in translating from the German, as I did in this lecture. The fault can not be that of Skoda, but of the reporter. I beg the reader to remember this.—Translator.

I have said that the infarctus hæmorrhagicus in tubercular individuals is a great rarity. Cases of this kind must, however, be examined, when death occurs, either during or soon after the hæmoptoic attack; when it occurred long after, then the explanation may be urged, that the blood has become so completely altered by the progress of disease and chronic inflammation, that it can no longer be recognized. If, however, death occurs during or soon after the hæmoptysis, and an infarctus was ascertained during life, then a post mortem examination should reveal an accumulation of blood in a certain place of the lungs. But this is not the case. It is also very rarely that we are able to make out an infarctus in a living patient, who had a recent hæmorrhage. When the individual is tuberculous, there will be dullness on percussion from that cause. If he is not tuberculous and suffers from hæmoptysis, then even the most careful examination, will almost never discover any dullness, which fully shows, that the extravasated blood does not remain in the alveoli.

From observations made of both the living and the dead, it seems very probable, that the hæmoptysis which occurs before and during the development of tubercle, proceeds from the bronchial mucous membrane, and not from the alveoli. Were it not so, then it would be very difficult to explain, why an infarctus hæmorrhagicus is so rarely found in such cases. If, on the other hand, the hæmorrhage comes from the bronchial mucous membrane, then we can see why the blood is not lodged, because it is coughed up. I can only say this: In a case of death during the hæmoptoic attack, we very rarely find the bronchi with blood in them; at least the larynx or trachea are free from it, because the cough and the retraction of the bronchi press the extravasated blood forward and expell it.

I can not share at all in Niemeyer's view, that hæmoptysis is in any manner the cause of all those grave phenomena of phthisis pulmonalis. This may be the case, where the extravasation takes place into tissues already diseased, as in cavernous excavations; there the blood may remain in part, and cause an increase of the irritation already existing there; still it should be noticed, in this connection, that blood is not a fluid which acts as a special irritant; blood extravasated in the subcutaneous cellular tissue in consequence of a blow, does not act as an irritant, but is rapidly absorbed.

But, even apart from this well-known fact, there is the behavior of the blood in hæmorrhages from cardiac lesions producing in fact no reaction in the lungs. This destroys the theory of Niemeyer. We have, therefore, no right to assume, that only in a tuberculous individual does the blood give a basis for the development of further diseased phenomena. I allow myself great importance to the hæmoptysis, but only in the sense of a symptom, indicating either already existing disease of the lungs, or a state of morbid development.

The controversy about the name of the disease is, as I have already said, an idle one. We know it only too well, that the diseases which really follow an hæmoptysis, pursue an altogether special and different course from that of the inflammatory process. True, that a chronic inflammation does also run a very protracted course, but it is the usual devastation of tissues, which I must still regard as tuberculosis, and which Niemeyer calls chronic inflammation. In this, his view, I can not share. When the inflammatory products of an acute pneumonia are left after its subsidence, then we have a chronic pneumonia to deal with. But these products behave altogether differently from those which we call tuberculous; the former may remain for months and years, without any consequent destruction of lung tissue, while the latter, when occurring, lasts hardly any length of time without consequent excavations. There is a great difference between these two diseases, but if the question is simply about a name, then I have nothing to say against it. All you have to do is, to call the diseased process of tuberculosis by the name of "chronic inflammation," and ascribe to it the symptoms which we are wont to ascribe to the latter. But it is a delusion, to suppose that any thing is gained for the therapeutics of the disease, by naming it "chronic inflammation." There is nothing left us beyond that which experience has taught us, and this is to treat symptomatically. We know there is no specific against tuberculosis. When, therefore, one chooses to say, that there is no specific against "chronic inflammation" also, then the relation of either of these to the therapeutics remains the same.

Hæmoptysis is, therefore, *no cause* of the subsequent disease of the lungs; that cause lies somewhere else than in hæmoptysis, which is only a *symptom* of the diseased process in the further development of tuberculosis.

Hæmoptysis may, indeed, be caused by other lesions, especially the cardiac lesions, and produce no further disease of the lungs, although an infarctus hæmorrhagicus may be left behind. There are also isolated cases of hæmoptysis, which are conditioned neither upon cardiac lesions, nor upon any disturbances in the lungs, and this hæmoptysis may occur repeatedly during the lifetime of the patient. But such cases are very rare, and may be conditioned either upon the presence of tubercles, in a circumscribed condition, from which place, as it never gets to be perfectly normal, hæmoptysis may occur from time to time; or it may be conditioned upon an enlargement of the capillaries or veins in a certain part of the lungs. Such an alteration in the pulmonary substance, may indeed produce many attacks of hæmoptysis, yet in spite of these, there will be no development of tubercles in such cases. When the bleeding ceases, the individual is well again, and apart from the debility caused by the loss of blood, there is no other diseased phenomenon to be observed.

[Note.—This interesting and analytical review of Niemeyer's late views in regard to hæmoptysis will be studied profitably by all.—E. S. G.]

ECLECTIC DEPARTMENT.

"Carpere et Colligere."

Art. I.—Contributions to the Pathology and Therapeuhics of Diabetes. By A. Dupré, Ph.D. Lecturer on Chemistry at Westminster Hospital, London.

According to the theory, most generally received, diabetes is caused mainly by a want of oxidizing power in the blood, the disease being intensified, perhaps, by an increased production of sugar or glycogenic substance in the liver. This sugar constantly thrown into the circulation, instead of being oxidized as in health, accumulates, it is supposed, in the blood, and is discharged through the kidneys, these organs simply removing the sugar contained ready formed in the blood.

With a view of testing, if possible, the correctness of this theory, I have, some time ago, taken an opportunity of carefully examining the urine of a patient suffering from diabetes; first while under a chiefly under animal diet; secondly, while under the same diet with the addition of various amounts of honey. These experiments, instituted by me, seem to point out an explanation of this disease differing from that above alluded to. I therefore beg to place them before the medical profession in the hope that they may receive some further elucidation from others.

Starting from the above theory, most medical men exclude sugar from the diet of patients suffering under diabetes, as well as farinaceous food, on the ground that such food, being simply converted into grape-sugar, is discharged as such through the kidneys, thereby materially increasing the quantity of urine and sugar excreted, and throwing an additional amount of unprofitable work on an already enfeebled constitution. Some medical men, however, recommend the administration of sugar to such patients, and they allege that it does not materially increase the amount of sugar discharged. But as far as I am aware, the exact nature of the sugar excreted when sugar is either included in, or excluded from, an otherwise animal diet, has never been investigated.

True diabetic sugar is identical with so-called grape-sugar; it has the same elementary composition, is like it fermentable, reduces cupric salts from their alkaline solution in the same definite proportion, and turns the plane of polarized light to the right to the same extent (molecular rotating power, 56). It is obvious, therefore, that if the patient be given either grape-sugar, or substances convertible into grape-sugar, it will be impossible to determine whether the sugar found in the urine is directly derived from the substances given, or whether it comes from a totally different source. In order, however, to decide the question: Is diabetes caused by a want of oxidizing power of the blood or not?—it would obviously be of great importance to be able to settle this point.

For such a purpose we should require a sugar closely allied to grape-sugar in general character, and yet readily distinguishable from it. Such a sugar should be traceable, after its administration, in the urine of the patient, supposing the blood to have lost its oxidizing power.

Fruit-sugar, in great measure, fulfils these conditions; it is identical in composition with grape-sugar, is not convertible into it, is closely allied to it chemically, is certainly not more readily destroyed by oxidation or fermentation, while both reduce cupric salts in exactly the same proportion. *However, fruit-sugar turns the plane of polarized light to the left about twice as much as grape-sugar turns it to the right* (molecular rotating power, 106).

A given quantity of a mixture of these two sugars, when estimated, as usual, by the amount of cupric salt reduced, will thus yield the same quantitative result, whatever be the proportion in which the two sugars are mixed; the optical test, however, will give a different result for every different mixture. Thus a solution containing 4 per cent. of grape-sugar and 2 per cent. of fruit-sugar will show 6 per cent. of sugar by the copper test, while the optical test will indicate little or no sugar. The 2 per cent. fruit-sugar turning about as much to the left as the 4 per cent. grape-sugar to the right, the effects neutralize each other. Or again, 5 per cent. grape-sugar and 1 per cent. fruit-sugar will also yield 6 per cent. sugar to the copper test, while to the optical test it will exhibit an effect equal to 3 per cent. grape-sugar only; in other words, the presence of 1 part of fruit-sugar in such a mixture will neutralize the optical effect of about 2 parts of grape-sugar, and thus the amount of sugar as found by the copper test will exceed the amount found by the optical test (assuming the sugar under examination to be pure grape-sugar) by about three times the quantity of fruit-sugar present.

With these facts present in my mind, I have, by experimenting with solutions of grape-sugar (employing Fehling's copper solution for the chemical testing, and and Prof. Jellet's beautiful instrument for the optical examination, and taking in each case the mean of several carefully conducted experiments), convinced myself that the results obtained by both methods will agree with each other to within 1.400 or less of the amount of sugar present, provided the solution tested contains 5 per cent. and upwards of sugar. Now, as before explained, an admixture of 1.1000 part of fruit-sugar to 1 part of grape-sugar would cause an apparent difference of 3.1000, or nearly 1.300 part between the optical and chemical test in favor of the latter. Even this difference is already greater than the above given experimental error (viz. 1.400), and any greater addition than this would, therefore, certainly be detected. We have thus a means, by combining the optical and chemical methods of testing to recognize with certainty the admixture of even a very small proportion of fruit-sugar to grape-sugar.

The patient, a man aged 59, the examination of whose urine is recorded in the following experiments, had been admitted into the hospital on February 4th, while suffering from diabetes. He at first passed a very large quantity of urine (13 to 14 pints) of high specific gravity, but after having been put upon a diet consisting of 8 ozs. of meat, 2 eggs, ½ lb. of gluten bread and greens, sugar and farinaceous food being carefully excluded, the amount as well as the specific gravity of the urine had considerably diminished.

On Thursday, March the 5th, at noon, I began the collection of urine for my experiments. The urine was always collected from noon one day to noon the next, the date given being that of the second day. During the time when the patient was taking sugar (his diet remaining otherwise unchanged) it was of course so arranged that he should take his prescribed quantity of sugar within the twenty-four hours during which the urine was collected. The experiments embrace, firstly, two days on which, and during at least for weeks previously, the patient had taken no sugar whatever; secondly, five days during which he took in all 32 ozs. of honey; and thirdly, two more days on which no sugar was taken.

The source of the fruit-sugar was honey, which, according to analysis, consisted of—

Fruit-sugar, : : : :	28 per cent.
Grape-sugar, : : : :	44 " "
Water, etc. : : : :	28 " "
	100

The examination of the urine itself was conducted as follows: The total quantity passed in twenty-four hours was measured and thoroughly mixed. 100 cc. of it were then measured into a flask, 20 cc. acetate of lead (one part of acetate in ten of water) added, and the mixture made up to exactly 200 cc. After standing some time the mixture was filtered, the filtrate shaken up with a little animal charcoal and again filtered, when a perfectly colorless and bright filtrate was obtained.* In this filtrate the sugar was estimated by means of Jellet's saccharometer, on the assumption of its being pure grape-sugar. Next, 20 cc. of the same filtrate were made up, with distilled water, to 300 cc., and in this diluted solution the sugar was estimated by Fehling's copper test. If then the percentage of sugar found by the optical test is multiplied by 2, and that found by the copper test by 30, the percentage of sugar present in the urine is obtained; from which, and the total quantity of urine passed, the amount of sugar discharged in the twenty-four hours can be calculated. Both processes will give the same result (within the above given limits of error) if the sugar present be only grape-sugar; the presence of even a small quantity of fruit-sugar will, as before described, produce a difference in the two results, the optical test showing less sugar than the chemical test.

During the last three days of the experiment the total amount of urea discharged in the twenty-four hours was also estimated. The analytical results are arranged in the following table:

Date.	The Honey taken in 24 hours contained grms. of		Urine passed in 24 hours.	Percentage of Grape-Sugar estimated.		Total quantity of Sugar in grms. excreted daily according to		Total amount of Urea in grms.
	Grape Sugar.	Fruit-Sugar.		Chemically.	Optically.	Chem. Test.	Optic'l Test.	
March			Cubcent.					
6	—	—	4.260	7.018	7.011	298.96	298.66	—
7	—	—	4.260	7.500	7.495	319.50	319.28	—
9	48.90	32.49	4·514	7.500	7.597	344.[illegible]9	345.21	—
10	48.90	32.49	4.260	7.500	7.495	319.50	319.28	—
11	97.82	64.96	4,260	8.106	8.094	345.31	344.80	—
12	97.82	64.98	5.680	7.791	7.790	442.53	442.47	—
13	97.82	64.98	5.396	8.330	8.340	449,48	450·03	23.76
14	—	—	6.250	8.049	8·055	503.06	503.44	50.60
16	—	—	4.260	7.839	7.845	333.94	334.19	88.76

An examination of the foregoing table will show that in every case the chemical and optical tests give, practically, the same results, and consequently no appreciable amount of fruit-sugar was excreted on any one of these days. If on the 11th, 12th, or 13th, as little as 1 per cent. of the amount of fruit-sugar taken (viz. 0.6498 grm.) had found its way into the urine, it would have occasioned a difference of nearly 2 grms. between the total amounts of sugar found by the chemical and optical tests; an amount which a simple inspection of the table, for those days on which no honey at all was taken, will show to be considerably greater than the experimental errors. We may therefore safely conclude that less than this proportion was excreted, and so far the blood would not seem to have lost its oxidizing power for sugar.

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* Previous experiments had shown me that neither the acetate of lead nor the animal charcoal, employed as above, remove any appreciable amount of fruit or grape-sugar from a solution.

The table further shows that the amount of sugar taken on the 9th and 10th (4 ozs. of honey) occasioned no material increase either in the percentage or in the total amount of sugar excreted. On the other hand, double this quantity (8 ozs. of honey) taken on the 11th, 12th, and 13th, considerably raised the percentage as well as the total amount. Indeed, on March the 12th and 13th the increase exceeds in amount the total quantity of grape-sugar consumed; and on March the 14th, when no honey had been taken, the quantity of sugar excreted is even higher. This increase can therefore certainly not be derived solely from the sugar taken, and may perhaps be accounted for by the greater amount of liquid drunk by the patient (on account of the thirst produced by his eating the honey), which considerably increased the quantity of urine discharged, and produced a corresponding augmentation of the sugar.

Lastly, it will be observed that on March the 13th the total amount of urea was only 23.76 grms., whilst on March the 14th, the first day after the cessation of the honey diet, it suddenly increased to 50·6 grms., sinking to 38.76 grms., on the 16th. This latter amount is somewhat in excess of the normal quantity, agreeing with the generally observed fact that the urea excreted by diabetic patients is in excess of the normal amount; the amount observed on the 13th is, however, in striking contrast with it, being considerably below even the normal amount.

Should future experiments confirm this remarkable effect of a honey diet, it will not be easy to reconcile it with the current ideas regarding the malady. Eor, why should the 163 grms., sugar, taken in the honey, reduce the urea to considerably below the normal amount, while upwards of 300 grms., sugar supposed to have passed through the blood in the same space of time left it above? Does not this observation point to the conclusion that the sugar found in the urine had not previously existed, ready formed, in the blood, but had been formed only in its passage through the kidnèys? Moreover, if the urea really represents tissue waste, would not a confirmation of this fact show the correctness of the practice of some physicians of giving sugar to diabetic patients?

The remarkable reduction in the amount of urea discharged when large quantities of sugar are consumed has previously been shown by F. Hoppe (Arch. f. Path. Anat. x. pp. 144-169), in the case of dogs fed either with meat and sugar, or with sugar alone. I have myself observed that in healthy persons, taking ordinary mixed diet, the exclusion of sugar from such diet, leaving it otherwise unaltered, perceptibly increases the amount of urea.

It also appears to me that in the received theory sufficient regard has not been paid to the fact that the percentage of sugar found in the blood of diabetic patients is always extremely small (according to Lehmann, never more than 0·047 per cent., and in one case I had an opportunity of examining, certainly less than 0·04 per cent.), and yet the quantity of blood passing through the kidneys in twenty-four hours must, i fthis theory be correct, contain considerably more sugar than is found in the urine discharged during twenty-four hours, since it would be an extravagant assumption to suppose that all the sugar contained in the blood is removed during its rapid passage through the kidneys. The sugar actually found in the blood and other fluids and tissues of the body might be perfectly explained as due to simple absorption from the kidneys, or even bladder, since it has been shown by Dr. Bence Jones and myself how rapidly substances are diffused throughout the entire body, in whatever manner they may be brought into the circulation.

However, I must leave such considerations to those better acquainted with the entire aspect of this disease than myself, and only hope that the experiments here recorded make out a case sufficiently strong to induce others to reconsider the current theory, and perhaps repeat and extend these experiments, as I have myself no opportunity to continue them.

[Note.—That the blood ln diabetes has not lost its oxidizing power (as is proved in these experiments) is most interesting to every student. Do not these resubts subvert the received pathology of this disease?—E. S. G.]

Art. II.—Gonorrhœal Rheumatism. Translated from Schmitt's Jahrbücher, by Henry Illowy, M.D., one of the resident Physicians of the Cincinnati Hospital.

As an appendix to our article in a previous volume, we report some monographs upon the subject in question, among which that of G. Voelkert, *de l'Arthrite Blennorrhagique*, (Paris, 1868, Adr. Delahayæ) deserves primary mention.

M. Voelkert, in an introductory chapter, gives at first a concise account of all the physicians who, up to the year 1867, had ever written upon gonorrhœal rheumatism. From this it appears that the French have furnished most of the literature on the subject; the English have also contributed, but the Germans paid it little or no attention. Even before the days of John Hunter, Schwediaur and Th. Selle, in 1781, described gonorrhœal rheumatism, and Hippocrates, in his aphorism, *Eunuchī non Laborant Podagra*, is supposed to have referred to it.

Already in 1809, gonorrhœal rheumatic affections of the knee-joint have been described.

Hunter first wrote upon the affection in 1781; then came the articles of Murray, Vegarous, 1786, of Joannis Colle, Monteggia. In the year 1806, Ivan published an article on gonorrhœal complications of the eye. Calixte Vincente wrote upon gonorrhœal rheumatic metastasis. Then came an article from Cullerier on gonorrhœa complicating rheumatism. Graves followed, in 1820; F. Ribes, Rossingol, Lænnec, L. Jourdan, Lagneau, in 1828, I. Cloquet and Foucart. Ricord did not occupy himself with it until 1838. Still later, Velpeau, Chelius, Beaume, etc.; and lastly, the article in the Nov. Diction. de Medic. must be mentioned.

Voelkert himself mentions fifteen cases that came under his own observation, and which are scattered throughout the various chapters on Ætiology, Symptomatology, Treatment, Nature of the Affection, and Conclusions.

We must refer those desirous of more minute detail to the monograph itself, and content ourselves, here, with giving the conclusions our author arrives at; anticipating them, however, with the table of statistics, condensed, given by Voelkert. Among the cases brought under the head of "A" are 119, from the observations of Foucart, Rollet, Fournier; under "B," 11 cases of Brodie and

Sordet; and under "C," cases, collected from the various periodicals, with Voelkert's 15 cases. (Total, 168 cases.)

	A	B	B.	Total.
Knee joints	83	6	25	114
Ankle joints	22	4	13	39
Shoulder joints	12	4	12	28
Phalangeal joints, tarsal & carpal	23	...	4	27
Hip joints	16	...	3	19
Wrist joints	14	2	8	24
Elbow joints	11	2	5	18
Temporo-maxillary	6	...	3	9
Mediotarsal and metatarsal	5	1	3	9
Lumbo-sacral articulation	4	...	...	4
Costal cartilages	2	...	...	2
Sterno-clavicular articulation	3	...	1	4
Peroneo-tibial articulation	1	...	...	1
Upper extremity	1	...	...	1
Multiple	...	1	4	5

From this it appears that the knee is most frequently the seat of the affection; still, for a positive decision of the question, the statistics of non-specific rheumatism must be compared. (Rep.)

The conclusions arrived at by Voelkert are the following:

I. There is an inflammation of the joints (phlegmasie articularie), with all the symptoms of an arthritis, which appears in the course or after the subsidence of a gonorrhœa.

II. This gonorrhœal arthritis appear in either sex.

III. It appears only in consequence of a urethral gonorrhœa; never from balanitis, hard or soft chancre, vaginitis, or a discharge from the cervix uteri; only the urethral discharge can give rise to it. The discharge may be present during the prevalence of arthritis, diminish, or even disappear.

IV. The gonorrhœa is the predisposing as well as the exciting cause. Taking cold may favor its production.

V. Generally, the larger joints become affected; other joints are, however, sometimes attacked.

VI. Hydrarthrosis is the most constant symptom of the disease. The symptomatology, as a rule, is not like that of ordinary rheumatism. The seat of the affection is the only thing common. The local character of an affection, and even the presence of all the characteristics of an arthritis, do not suffice to call it a gonorrhœal rheumatism. Only in consideration of the seat of the affection, and the causes upon which it is dependent, may the name gonorrhœal rheumatism be applied. The pain is seldom absent.

VII. Complications on the part of the serous membranes are not so rare nor of so grave a character as in idiopathic rheumatism. The complications peculiar to gonorrhœal rheumatism, on the part of the eye, ear, vessels and nerves are generally milder,

VIII. Not always is the affection of the joints of a mild character. In some cases it pronounces itself as chronic hydrarthrosis, anchylosis, deformity of the joint, or tumor albus. Generally, it commences to disappear in from fourteen to sixteen days. Death may be an indirect issue of the affection.

IX. If there be symptoms of inflammation, let the treatment be antiphlogistic. The affected joint must have absolute rest. To quiet pain, aconite, opium and hypodermic injections. As soon as the pain on micturition has subsided, treat the gonorrhœa energetically.

ART. III.—TREATMENT OF MALIGNANT TUMORS BY ELECTROLYSIS. By W. NEFTEL, M.D., New York.

Hon. Th. T. D—, a highly-accomplished gentleman, fifty-eight years old, consulted, last year, several celebrated surgeons in London and Paris (among others, Nélaton), with regard to a tumor in the left mammary region. They all advised him not to undergo any surgical operation, as they considered the tumor a malignant one, the removal of which would only hasten the fatal termination of the undoubtedly constitutional disease. The patient, nevertheless, insisted upon the extirpation of the tumor, and our great surgeon, Dr. Marion Sims, quite successfully performed the operation in Paris. Soon after the cicatrization of the wound, however, the axillary glands of the same (left) side began to enlarge, and, in January last, presented a tumor of the size of an egg, consisting of a conglomeration of enlarged and indurated glands. Dr. Sims again extirpated this second tumor, the microscopical appearance of which was that of a real cancer (carcinoma of the axillary glands). The specimen was presented to the New York Pathological Society, and examined by distinguished histologists.*

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*Medical Record, March 1, 1869, No. 73, p. 17.

The wound this time healed very slowly, as it was accompanied by dangerous complications, an extensive erysipelas, high fever (107.8° Fahr.), rigors and delirium. Scarcely had the wound healed, when a new scirrhous tumor began to grow in the right mammary region, and very soon attained the size of an orange, or more. It now became evident that another surgical operation would be useless, for it could only call forth, as before, an immediate relapse, and perhaps in a more dangerous locality. As nothing remained to save the patient, who was perfectly aware of his condition, and whose constitution was broken down, I proposed the electrolytic treatment, expecting, as the best result, merely the local destruction and absorption of the tumor; for, in the present state of our knowledge, I could not have entertained any hope of producing by electrolysis the least favorable change in the constitutional disease.

On the 27th of April, and the 4th and 7th of May, in the presence of Drs. Metcalfe, Nott, and B. Howard, I performed the electrolysis by means of the large apparatus of Krüger and Hirschman, with elements of Siemens, subdividing, at the second and third operation, the cathode into three and four branches, connected with the needles by serres-fines. The latest improvements of the apparatus afforded the possibility of gradually increasing the quantity of the current, without interrupting the circuit, and of diminishing it in the same way, so that the circuit was broken only by the extraction of the last needle. Not a drop of blood escaped. The first operation lasted two minutes, using ten elements; the second five minutes, with twenty elements; and the third ten minutes, with thirty elements. After the operation, the tumor increased considerably in size, but became softer and more elastic. No febrile or other local or constitutional symptoms followed. On the contrary, the patient, who before was weak, anæmic, and cachectic, began to gain strength and flesh; the tumor at the same time diminishing slowly but constantly. A month after the first sitting, the tumor was found a great deal softer and smaller; at the end of the second month it had almost disappeared, and a fortnight later no trace of it remained. The general condition of the patient is now in all respects excellent, and new deposits can nowhere be detected. In his last letter he writes to me as follows: "I am not able to discover any new deposits anywhere, nor would the tumor in the right breast be detected by any ordinary observer. I hope the old devil who took lodgings there, and was ejected, took all his baggage with him."†

The above-related case presents the following points of interest:

1. The patient has been examined by a number of celebrated physicians in Europe and America, who have all considered him affected by a constitutional cancerous disease; and the extirpated tumors, being real cancers, have proved the correctness of the diagnosis.

2. The described case brings me to the conclusion that the electrolysis must be considered not only as a local agent, as thinks Althaus,* but as one capable of modifying, and even curing, the constitutional diathesis. I explain it in the following way: It has already been established, by experimental researches, that the electric current affects powerfully all protoplasmatic structures.† Hence it is possible and probable that the cells (which have to be considered as bearers of the contagion, and the cause of the generalization of the disease) get their protoplasma altered in such a way, by electrolysis, as to lose its specific infectious properties, and make it incompatible with the existence and propagation of the cancerous new formation.

3. Finally, this is the first authentic case of cure of a real cancer in a subject affected with constitutional diathesis. I think that if Althaus, to whom we are indebted for the improved electrolytic method, did not succeed in curing a single case of malignant tumor,‡ it is owing only to the imperfection of the apparatus with which he works. I have had one like it imported from London, and have ascertained, by the feeble deflection of the needle of my galvanometer, and by the weak muscular reaction it produces, that Althaus' apparatus generates a very small current quantity. This explains also why he is obliged to have recourse to so numerous and prolonged sittings (half an hour), while, with the excellent apparatus I am in the habit of using, incomparably better results can be obtained in a much shorter period.

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†The patient has since returned to the city, and been seen by some of the physicians above named.

*On the Electrolytic Treatment of Tumors. London, 1867, p. 10.

†Vide Kuhne: Lehrbuch der physiologischen Chemie, p. 333.—Golubew: Wirkung electrischer Schlage auf die farblosen Formbestandtheile des Blutes. Cent. f. med. Wiss. 1869. No. 5.

‡Medical Times and Gazette. 1868, p. 469.

With regard to non-malignant tumors, I will give in my next paper an account of what I have attained by electrolytic treatment. Especially the soft tumors, nævi, etc., yield very rapidly to it. A large goitre of eighteen years' standing has completely disappeared in the course of two months. So far as I can judge from my experiments on animals (rabbits), the electrolytic treatment of varicose veins and aneurisms promises to be highly successful. Examining microscopically the thrombi, I could repeatedly convince myself, in opposition to the assertions of Tschaussoff,§ that the organization of a thrombus really does take place, a fact which had been already experimentally demonstrated by the classical researches of Virchow,|| as far back as 1846. Again, it is not difficult to follow up the gradual transformation of the colorless blood-corpuscles into connective-tissue corpuscles, which was likewise accepted by Virchow.

But the most surprising effect can be produced, by the electrolytic treatment, on organic strictures of the urethra. The only case I have had is a gentleman who is yet under my observation. He has been suffering for about ten years from organic strictures impermeable even for the thinnest bougies. He told me that, though he had been under the care of many distinguished surgeons, no one could ever succeed in introducing a catheter into his bladder. On the 20th of July I introduced a French catheter, No. 3, up to the principal stricture, situated in the prostatic part of the uretha, the prostate itself being enormously enlarged, and, by a very simple contrivance, directed the electrolytic action of the negative pole upon the stricture during two minutes. Immediately, to my great astonishment, the catheter passed within the bladder, and an immense quantity of turbid and decomposed urine was discharged. Since this the patient has been able to pass urine easier than he has ever done before. On the 24th of July, I repeated the operation with the same result, but using catheter No. 6 of French scale; and I can now introduce Nos. 8 and 10 without resorting to electrolysis. So far as I can ascertain, the prostate itself does not seem to be enlarged any longer.

In spermatorrhœa this mode of treatment cannot be

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§Archiv, fur klin. Chirurgie. xi., 184.

||Gesammelte Abhandl., p. 823.

surpassed. I have had several cases of inveterate spermatorrhœa, which all yielded to a single or to repeated electrolytic treatment of the prostatic part of the urethra. I am sure that those who have once tried this method will find it far superior to all the others, which are comparatively tedious and uncertain.

The first discoverer of the electrolytic treatment was Crussel,[*] of St. Petersburg, Russia. Already in 1839 he demonstrated experimentally the different effects produced by the different poles, and used electrolysis in the treatment of strictures, exudations, tumors, and ulcers. A number of others followed him, among whom one of the most successful is undoubtedly my friend, Dr. Moritz Meyer,[†] of Berlin. Dr. Althaus has quite recently improved the method and shown the great importance of the negative pole in the treatment of tumors. Certainly every observer will agree with him that electrolysis, besides annihilating the pain, acts in a threefold manner,[‡] viz.: 1. Through mechanical disintegration of the tissues by the nascent hydrogen; 2. Through the dissolving action of the accumulated free alkali (potash, soda, and lime); 3. Through the local modification of nutrition (by means of the vaso-motor nerves) of the parts brought under the immediate influence of the current. To these local effects I can now add, from my own experiments and observations, the constitutional effect of electrolysis, which latter especially makes this method invaluable in many hitherto incurable diseases. One of its great advantages is that it is never followed by inflammation, suppuration, sloughing, or other disturbances, and that the patient can continue his usual occupation and mode of life.

The electrolytic treatment is calculated to open a large field for surgery, and will be applied very soon to a variety of surgical diseases, to the advantage of the profession and the benefit of suffering humanity. The surgeon now, besides his biological knowledge, and the use of his mechanical appliances, will acquire and appropriate to himself the knowledge of physics, electrophysiology, and the management of the complicated galvanic apparatus.—*Med. Rec.*

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[*] Crussel: Die electrolytische Heilmethode.—Medic. Zeitung Russlands. 1847-48.

[†] Moritz Meyer: Die Electricitat in ihrer Anwendung auf practische Medicin. Aufl. 1868, pp. 405, 407.

[‡] Op. cit., p. 441.

ART. IV.—TREATMENT OF WOUNDS BY EARLY AND REPEATED COUNTER-IRRITATION.

Mr. Furneaux Jordan's treatment of orchitis by painting the scrotum with a strong solution of nitrate of silver was recently reported in the Journal. Mr. Jordan (Lancet) adopts the same idea in the treatment of inflammation in general. A young man having been received in Queen's Hospital with a gaping cut over the knee, the wound was closed with silver sutures, the joint compressed with cotton wool, and bandages and a splint applied. Inflammatory symptoms appearing on the second day, blistering over the femoral and anterior tibial arteries was resorted to, and counter-irritation kept up by iodine. All unfavorable symptoms disappeared after the use of counter-irritation. The conditions which permit inflammation, says Mr. Jordan, are—freedom to swell beyond the physiological limits, unhealthy blood, absence of other prosperous inflammation, unrest, and a cause. Therefore, the indications in the treatment are to remove the cause, to restrain swelling, to reduce the amount of blood to the part, to obtain rest and to excite a more prosperous inflammation. Much may be done to prevent probable and expected inflammations by counter-irritation, and we might prevent cardiac inflammation in acute rheumatism, peritonitis in wounds and operations opening the abdomen, suppurative synovitis in wounds of joints, etc. In some further remarks called forth in a discussion upon the subject in the Royal Medico-Chirurgical Society, Mr. Jordan said that he usually blistered in stripes, and that he applied these stripes along the course of main arteries in order to obtain sheltered positions, and also because he thus hoped to influence both the vascular and the nervous trunks. He attached no importance to the term counter-irritation, and would gladly accept a better one from Dr. Anstie. His idea was to excite another inflammation; and perhaps "distant irritation" might convey this idea. He regarded contused wounds of the knee-joint as being far less dangerous than simple incised wounds. The bruising and laceration of the soft parts around acted as a counter-irritant to preserve the joint from destructive inflammation. He believed there was no inflammation in which moderate pressure was not useful—pressure that stopped short of producing pain. In treating common inflammation, such as a boil or carbuncle, he would surround it with a broad belt of artificial irritation, at some little distance; and in erysipelas of the thigh he would blister the other. He was not accustomed to open the knee-joint for the removal of the false cartilages; but employed a subcutaneous incision. If he wished to open the knee-joint, he would prefer making a bruised wound to an incised one.—*Pacific Med. and Surg. Jour.*

ART. V.—ON CHLORAL IN PHTHISIS, AND ITS ANTAGONISM TO THE POISONOUS EFFECTS OF CALABAR BEAN.

By JOHN HUGHES BENNETT, M.D., F.R.S.E., Professor of the Institutes of Medicine, and of Clinical Medicine in the University of Edinburgh.

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What has struck me with regard to the hypnotic effects produced by chloral, is the fact pointed out by Liebreich, that it causes sleep without exciting the pulse or respiration. In the majority of cases it produces no excitement or uneasiness, nor is it followed by headache, furred tongue, or feeling of depression. With a very few exceptions, indeed, it seems in moderate doses to occasion natural sleep. Under its influence I have seen rabbits motionless breathing tranquilly, and evidently fast asleep, who could be roused so as to take a few steps, or eat a little cabbage, and then, overcome by drowsiness, fall asleep again. The same power of being roused from a moderate dose occurs in the human subject. No doubt the somnolence can be augmented, by increasing the dose, until it becomes soporose or comatose, when stimulants fail to arouse. Of the intensity of this last effect in man, however, little is known; but from what has been observed in the lower animals, there can be little doubt that sufficient coma can be produced to admit of operating without pain. Whether, however, chloral is so easily manageable as ether or chloroform remains to be seen.

The qualities I have described render chloral highly serviceable to the physician. Although in a few instances it has occasioned excitement before sleep, and headache afterwards, in the majority of cases it is not a narcotic but a pure hypnotic. The ill effects so common in the administration of opiates I have not witnessed on giving chloral at all. For example, the pupil is not contracted more than in ordinary sleep. There is not, for the most part, on waking, the confusion of head, the sense of depression, the furred tongue, want of appetite, nausea or vomiting, suppression of the secretions or constipation, so common after giving opiates. It therefore occurred to me that it would be a most useful hypnotic in phthisis. Here it too frequently happens that cough, pains in the chest, and restlessness at night, if alleviated by opiates, and even by that excellent preparation chlorodyne, leave the patient so depressed, feverish, and weak, as to do more harm than good. Indeed in my own practice I have found that such is the loss of appetite, increased weakness, and emaciation that follow their use, that I never give them except in the last stages of the disease, and when, all hope of prolonging life having ceased, we choose the least of evils in procuring even unhealthy sleep. But matters are greatly changed when we are able to obtain the natural sleep that chloral produces. By its aid we can lull irritation, and give rest for a time, in many cases, without any injury whatever. I have recently made special observations on this point in nine cases of phthisis now under my care in the clinical wards, and have collected the experience of some of my colleagues.

I think it will be admitted that no kind of opiate would have produced such uniformly good, and so few bad results in twenty-one cases of phthisis. In three cases individuals slept well habitually, and the remedy only intensified sleep without effecting the head, tongue, or appetite. In one case it caused vomiting twice, when taken with cod-liver oil, but when dissociated from it produced no ill effect. In one case, in addition to cough and restlessness at night, there was considerable sweating, which was much alleviated by the chloral. To assure myself of this fact, it was given ten nights running, always producing good effects, and when stopped the sweating again increased. In one case it produced excitement and a state approaching delirium, but the dose was 30 grains. In one case the same dose caused slight headache in the morning. In one case also the tongue was more furred afterwards. In all the cases the relief to the cough and restlessness at night, with the production of sound sleep, was most marked, while the head, tongue, and appetite were in no way affected.

For the same reasons that chloral is useful in phthisis, it has been found beneficial in certain cerebral diseases, in which opium is contra-indicated. In another class of cases, however, the valuable qualities of the latter drug in checking secretion, while acting as a sedative, will give it superiority. I refrain, however, from entering into a consideration of the numerous diseases in which the drug has been administered, and which have been recorded by Liebreich and several others. The first step, it appears to me, ought to be a determination of its physiological action; and this, so far as experiment and observation have yet gone, points to its being, in moderate doses of 20 to 30 grains, the purest hypnotic we possess. In doses of 30 to 60 grains it causes excitement, giddiness, and headache more frequently.

Observations to determine the antagonism between Chloral and Calabar Bean.—In five experiments on as many rabbits, fatal doses of the extract of Calabar bean were injected hypodermically, after the full effect of chloral was produced, with a view of determining how far the poisonous influence of the former was counteracted by the latter. In every case the convulsions were checked and life prolonged, but death ultimately resulted.

Experiment 6.—Three quarters of a grain of Calabar bean extract hypodermically injected killed a full-grown healthy rabbit, with violent general convulsions, in six minutes.

Experiment 7.—Repeated in a similar rabbit, after it had taken fifteen grains of chloral. There were no general convulsions, and death occurred in 2 hours and 53 minutes.

Experiment 8.—Repeated in a large healthy rabbit weighing 6 pounds, after it had taken fifteen grains of chloral. No general convulsions, but insensibility and profuse salivation, paralysis, and general muscular twitchings; died in 1¾ hours.

Experiment 9.—Repeated in a similar rabbit, weighing 6 pounds. The same phenomena were produced, and lasted 3¼ hours, when the animal slowly recovered.

There can be no doubt that three quarters of a grain of the Calabar bean extract employed, made by the Messrs. Smith of this city, would kill any rabbit in from six to eight minutes. The influence of chloral in counteracting this result was most marked, as may be judged of by the above experiments. It has yet to be determined how far other hypnotics and narcotics may, like atropia, as shown by Dr. Fraser, and like chloral as in the above experiments, produce a similar effect.—*London Practitioner.*

ANALYTICAL DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."—PLAUTUS.

ART. I.—ANALYSIS OF VARIOUS ARTICLES. Published in the Medical Times and Gazette, the British Medical Journal and the London Lancet, etc. (Original copies.) By PROF. JAS. M. HOLLOWAY, M.D.

Dilute sulphuric acid for removing carious and necrosed bone.—George Pollock F. R. C. S., at the St. George Hospital, has employed this mineral acid, with marked success, in hastening the removal of dead bone, and also in inducing healthy action where caries is progressing. He gives the history of five type cases. That number could be largely increased were it requisite. He prefers this method to gouging and scraping; the use of caustic potassa or the actual cautery. He first used it in a case of syphilitic necrosis of the cranial bones, in which operative interference was contra-indicated. It can be employed without danger, even where the pulsating brain can be seen through the diseased parts.

The ordinary formula for use is: Equal parts of sulphuric acid and water. It should be applied to the exposed bone, either on lint or with the glass brush, to be determined by the situation of the bone involved.

The therapeutic value of the acid is based upon its well known power in dissolving out the earthly salts from dead bone. Mr. Pick, Mr. Pollock's colleague at the hospital, thus describes its action: "When applied to diseased bone, a rapid solution takes place, the bone becomes dissolved and melts away and is thrown off in the discharge, leaving a perfectly healthy granulating surface, which quickly cicatrises." Mr. Pick uses the undiluted acid as a rule.

Production and treatment of Stertor.—On the 24th of May, Dr. Bowles, of Folkstone, read a paper before the

Med. and Chirug. Society of London, on the production and treatment of stertor. He maintained that stentor was almost immediately relieved by turning the patient on the side and fully extending the body. The lung of one side, being relieved of pressure, could play freely, and the effused mucus collects in the lung of the opposite side by gravitation. The patient should be changed from one side to the other every two or three hours, when there will be a change of the fluid to the dependent lung. In cases of paralysis from apoplexy, the patient should be placed on the paralysed side.

Palatable formula for the Hydrate of Chloral.—Hydrate of chloral, ʒss. chloroform water, ʒjj, syrup oranges or tolu ʒj-jj, tincture of ginger, 6 to 12 drops, water to one ounce and a half. The *chloroform water* is prepared by dissolving a half fluid ounce of chloroform in one gallon of water. This seems to intensify the action of the chloral hydrate and covers the acrid taste.

Infusion of wild thyme in dropsy.—A correspondent of the Lancet for May 7, 1870, calls attention to the activity of an infusion of wild thyme, as a purgative and diuretic, in acute anasarca. According to the U. S. D., the wild thyme of Europe is analagous to garden thyme.

Iodide of Potassium in minute doses.—A "country subscriber" asks to be informed as to the propriety of administering the above remedy by the rectum in a case where it is imperatively demanded, but is ill borne by the stomach in ordinary doses. The editor of the Lancet, in answer, advises that the dose, by the mouth, "should be diminished until all hurtful effects cease." "We have known, under such circumstances, the single dose brought down gradually from 10 grains to a half grain, and the patient cured by perseverance with the latter quantity."

Termination of Motor Nerves in Muscle.—The following are the conclusions of M. Henocque's investigations, by numerous methods: "1. The distribution of nerves in smooth muscles is not only identical in man and other vertebrate animals in which it has been observed, but is essentially similar in all the organs containing smooth muscle. 2. Before terminating in the smooth muscles, the nerves form three distinct plexuses or net works—(*a*) a chief or fundamental plexus, containing numerous ganglia, and situated *outside* the smooth muscle; (*b*) an interminable plexus; (*c*) an intra-muscular plexus, situated *within* the fasciculi of smooth fibres. 3. The terminal fibrils are every where identical; they divide and sub-divide dichotomously, or anastomose, and terminate by a slight swelling or knob, or in a punctiform manner."

One Hundred and Eighty-four Cases of Stone in the Bladder in Adults treated by Lithotrity.—Sir Henry Thompson, at the meeting of the Royal Medical and Chirurgical Society, May 10, 1870, gave the details of 184 cases of lithotrity, operated upon within a recent period. They were consecutive cases; were all treated by the same method and with the same instruments. They were all adults, the mean age of the 184 cases being no less than 61 years. The youngest was 21 years and 46 of the cases were 70 years and upwards. All stones of an ounce and upwards were reserved for lithotomy. The recoveries, including every kind of casualty, were 93 per cent. Omitting five cases of death not due to the operation, the mortality was 4 per cent. "Neither lithotomy nor lithotrity would do more than remove the stone; and from 20 to 30 per cent. of the patients would have other urinary troubles."

Robertson's Instrument for Prolapsed Funis.—"A loop ot tape is passed as a sling through the eyelet-hole near the blind end of the tube. In this loop the prolapsed cord is held. The stilet is then passed in the tube to carry it into the uterus beyond the presenting part of the child. When the loop and funis slung in it are in safe position, withdraw the stilet, leaving the elastic tube *in situ*. This, of course, will follow when the child is delivered. It offers no impediment to labor.

Nilrous Oxide Gas in Excision of the Mamma.—Surgeon J. R. Begg, Dundee Royal Infirmary, has recently employed this gas as an aaasthetic in amputating the mamma. During the operation the gas was inhaled, at intervals, for six minutes and forty seconds, and it was shut off for one minute and forty seconds. The giving of the gas was successful—the patient coming speedily from under its influence.

[In 1867 the writer removed a cervical tumor while the patient was under the influence of this gas. Forty gallons were employed during the operation. The patient walked up stairs, as soon as the wound was dressed, and during the day attended to her domestic duties. Before and since that time the writer has employed the gas in many cases of minor surgery with uniform good results; such as lancing felons, removal of inverted toe-nails, excision of small tumors about the orifices of the body.—J. M. H.]

CLINICAL RECORDS.

"Ex Principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—LESSONS FROM THE MEDICAL CLINIC AT THE "HOSPITAL DE LA CHARITE," GIVEN BY S. JACCOUD, Assistant Professor to the Faculty of Medicine at Paris, Physician to the Hospital St. Louis; Chevalier of the Legion of Honor; Corresponding member of the Royal Academy of Science of Lisbon, and of the Medical Societies of Berlin, Vienna, Wurzburg, etc. Containing 29 Wood-cuts and 11 Chromo-lithographs.

[Translated by Dr. J. D. JACKSON, of Danville, Ky.]

SIXTH LECTURE.—OF THE HEART.

General Principles for the Clinical Examination of the Heart. Situation of the Organ in its Relations.—Connection between the Cavities and Orifices and their Relations with the Thoracic Wall, and with the Lungs—Dimensions of the Orifices.

Physiological Phenomena of the Revolution of the Heart.—Movements and Sounds.—Of the Motive Measure, and the Auditive Measure.—Plan Drawn.—Connection between the Movements and Sounds.

Points of Election for Auscultation of the Heart.—Character of the Sounds.—Division of the Sounds between the Points of Auscultation.—Separation of the Normal Sounds into their Constituent Elements.—Table of the Sounds of the Heart Completely Dissociated.

Application to Pathology —Connection between the *bruits de souffle* and the Normal Sounds.—*Foyer's maxims.*—Semiological Value.

Gentlemen:—Before studying with you certain particular cases of organic lesions of the heart, I think it useful to recall to you a certain number of general facts, which one ought to have present in mind when proceeding to the clinical examination of this organ. I hope thus to facilitate your understanding on certain important points of semiology, and at least put you in the way of following and repeating with a knowledge of the cause, the divers explanations which you see me practice at the bedside of the patient.

It is essential before all, to be perfectly fixed upon the situation of the heart, and upon the relations which it presents in its different parts, and as a whole with the anterior wall of the thorax. Although these topographical relations of the interior and exterior present numerous varieties, which necessarily escape from a synthetical exposition, it is nevertheless possible to arrive at certain generally precise postulates, a sort of mean ideal, around which, within narrow limits oscillate individual facts. The classical researches of our illustrious master Bouillaud, have created this part of pathological anatomy, to which Hope and Gendrin have also contributed important works; more recently J. Meyer, Luschka, and Hamernjk have donated to science remarkable observations, which bear the impress of mathematical precision.* The conclusions resulting from the comparative study of these valuable documents, I propose to make you acquainted with; laying aside all discussion, I wish to confine myself to an enunciation of facts. The interesting work of the learned professor Friedreich (of Heidelberg) is my guide for the *anatomical part* of this exposé.†

Situated in the anterior mediastinum, where it corresponds to the middle expanse of the aponeurotic centre of the diaphragm, and to the muscular tissue in the vicinity of the left border of this leaflet (*falioh*), the heart presents in its direction a threefold obliquity, from above to below, from right to left, and from behind forward; in other terms, its base is turned to the right, above and in rear; its point is directed to the left, below and in front. In descriptive anatomy the three limiting borders are distinguished as the right border, the inferior border, and left border. The right border extends from the sternal extremity of the second intercostal space of the right side, to the sternal insertion of the fifth costal cartilage of the same side. But in this tract, the border is not rectilinear, it describes a marked curve, the convexity of which passes out from the right border of the sternum. Below, the right border of the heart continues by an angle, rounded with the inferior border of the organ. This last is directed left and downward from the fifth right costal cartilage to the internal portion of the left fifth intercostal space, and even to the sixth of the left side, where it concurs to form the point of the heart by its meeting with the left border. This directed a little in rear, extends leftward and below from the sternal extremity of the second left intercostal space to the fifth space of the same side, where it joins the inferior border; we will go back to the position of the point.

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*J. Meyer, Weber die Lage der einzeluen Herzabsehmitt Zur Thoraxund, Vircherr's Archivs, III., 1851.

Luschka Die Brustorgam des Meuschen in ihrer Lage. Tubingen, 1857. Hamernjk Das Herz und seine Beweguug. Prag., 1858.

†Friedrich, Krankheiten des Herzens in Virchow's Handbuck der Pathologie.

The superior limit of the heart, which corresponds to the highest part of the left auricle, is indicated by a line drawn transversely from the inferior border of the second right cartilage to the corresponding border of the second left cartilage. This line corresponds in rear to the inferior part of the body of the fifth dorsal vertebra. The inferior limit which indicates the position of the apex, is one of the most variable. Most frequently it is situated precisely upon a vertical line let fall from the left nipple, in rear of the sixth cartilage, or a little below; in other individuals, it is a little within this vertical line, and responds to the middle of the height of the fifth intercostal space. It is on a level with the fourth and the fifth rib, that the heart presents its greatest transverse dimensions. At this height, it extends beyond the median line of the sternum to a mean distance of 8 to 9 centimetres on the left, and from 4 to 5 on the right. (Friedreich).

The relations of the heart with a vertical line drawn through the middle of the sternum, are such, that about a third of the organ is to the right of this line, and two-thirds to the left. The part situated to the right of the median-sternal line comprises the right auricle, save its tip, the inter-auricular septum, the right portion of the left auricle, and the inferior and most convex part of the right ventricle. To the left of the vertical line is the rest of the right ventricle, all the left ventricle, the left half of the left auricle; and its auricular appendage, and finally the free extremity of the right auricle. (Luschka).

This being the general situation and topographical relations of the heart, we will now proceed to the two capital questions, to which the preceding is the necessary introduction, seeing the relation of the four cavities and the four orifices, with the anterior wall of the thorax.

Relations of the cavities to the wall.—Situated in rear of the sternum, beyond the right border of which it passes two centimetres, the *right auricle* extends from the middle of the sternal portion of the second right intercostal space to the fifth synchondro-sternal articulation. The *left auricle*, directed altogether backward, touches by its left half, the left border of the sternum; it is comprised between the inferior border of the second left synchondro sternal articulation, and the inferior border of third synchondro-costal articulation of the same side. This auricle is covered anteriorly by the union of the aorta and pulmonary artery.

The *right ventricle*, which forms anteriorly the greatest part of the heart, presents one portion retro-sternal, and another extra-sternal. The first, which is about the third of the whole ventricle, extends from the sternal extremity of the third cartilage of the left side, to the base of the ensiform-cartilage; the extra-sternal portion goes from the middle of the anterior portion of the second left intercostal space, to the fifth or sixth synchondro-costal articulation. The arterial cone from which the pulmonary artery emerges, mounts along the left border of the sternum, from the middle of the third left intercostal space up to the middle of the second.

The *left ventricle*, of which only a little segment is visible in front, after opening the pericardium, extends from the middle of the second intercostal space, left side (sternal portion), to the middle of the fifth or even the sixth rib. Its external border corresponds very exactly with the line of the synchondro-costal articulations of the third to the sixth.

Relations of the orifices to the wall. Left auriculo-ventricular orifice and mitral valve.—Situated a little in rear and to the left of the aortic orifice, it generally reposes directly above the superior border of the third left costal cartilage, beside the border of the sternum. The border adherent to the mitral value naturally corresponds to the same point, whilst the free border descends more or less into the third intercostal space. A needle thrust into the middle of the vertical diameter of the second space, at a centimetre from the left border of the sternum, in the majority of cases, touches the adherent border of the valve; this border is behind the origin of the pulmonary artery. It the needle is plunged into the third intercostal space, at an inch and a half from the left sternal border, it goes a little above the free border of the valve, or upon the border itself.

The right auriculo-ventricular orifice, and tricuspid valve.—On plunging a needle into the third left intercostal space, immediately at the border of the sternum, and another needle at the sternal articulation of the fifth right costal castilage, the orifice and valve are between the two.

The right arterial or pulmonary orifice—Corresponds generally to the middle of the vertical diameter of the second left intercostal space from 8 to 12 millimetres from the border of the sternum. It is then a little above the mitral orifice.

The left arterial or aortic orifice—Is of the same height as the left auriculo-ventricular orifice, but it is anterior to it, and a little more to the right. It usually corresponds to the sternal insertion of the third left costal cartilage, and to the portion of the sternum which is immediately contiguous. When a needle is thrust a little to the left of the sternal median line, between the vertical, and the third synchondro-sternal articulation, very generally the cavity of the aorta is touched just at the level of the free border of the sigmoid valves.

At their origin the two arterial trunks are superimposed, the pulmonary artery in front, the aorta in rear and cover in the two orifices alike; but that of the aorta looks above and and to the right, that of the pulmonary artery, is turned upward and to the left. On a level with the free border of the sigmoid-valves, the superposition ceases, and the two vessels situated beside each other, soon after diverge; the aorta mounts obliquely to the right, the pulmonary artery goes to the left and in rear. A line drawn obliquely from the third left synchondro-sternal articulation, to the internal part of the second right intercostal space, faithfully represents the course of the first portion of the aorta. A needle plunged into the second right intercostal space, just beside the border of the sternum, pretty constantly touches the right border of the ascending aorta; this same needle goes pretty nearly exactly to the embouchure of the vena-cava-superior. (J. Meyer. Friedreich).

Relations of the orifices to the lungs.—The researches of Luschka and Bochdalek upon the disposition of the mediastina have a little modified the old notions upon this anatomical point. Without entering into all the details of this question, it will suffice for me to tell you that in the generality of cases, the cardiac orifices and their valves are all covered with a lamina more or less thick, of pulmonary tissue; this results from the convergence of the two layers of the mediastinum and the two lungs on a level with the fourth pair of ribs. Thus, the two auricles, the origins of the aorta and the pulmonary artery and their sigmoid valves being above the fourth rib, are covered by the anterior borders of the superior lobes of the two lungs, converging the one toward the other. In separating outward from the point of contact, the anterior border of the superior lobe of the left lung, covers in its descent, all that part of the left ventricle which is visible in front, the mitral orifice and valve, and often even, a small portion of the anterior face of the right ventricle. In like manner, the anterior border of the right lung, diverging from without and below, to shoot out at the fourth rib, covers over a segment of the right ventricle, the tricuspid orifice and its valve.

As to the respective dimensions of the orifices, the following numbers express the mean circumferential measure. Mitral orifice 93 millimetres. The tricuspid orifice 103 m. m. The aortic orific 66 m. m. The pulmonary orifice 71 m. m.

I am fully aware of the dryness of these details, but they are indispensable; hold it for certain, gentlemen, that without these precise notions, no one can proceed with profit to the study of heart disease; when you apply your stethoscope to the præcordial region, it is necessary that you should know which is the point, which is the orifice of the heart you have under your ear. Now, because of the extreme proximity of the four orifices, no detail is superfluous for arriving at a distinction which is the basis of the clinical examination and conclusion.

This first point acquired, we pass on to the study of the principal phenomena which reveal the functional activity of the heart.

The rhythmical action of the heart, produces two sorts of phenomena, known as movements and bruits.

Among the movements, some are appreciable across the walls of the chest, we call these movements exterior; the others escape direct observation and the knowledge which we have thereupon, is deduced from the anatomical disposition of the valves, experimentation and the interposition of pathological facts. In a state of health, the fixed connections unite the interior and exterior movements; the one succeeds the other in a constant order, and at the end of a very short period the same phenomena are reproduced according to the same mode; each of these periods is a revolution or a beat of the heart, the mode of succession of these periods, constitutes the rhythm of the movements of the organ.

In the study of these periodical cycles, where the same motor phases reproduce themselves undisturbedly, it is of little importance whether we commence by one or the other of the isolated phenomena of the complete revolution; whatever may be the point of departure, there is always a time to which the analysis returns back, and at this instant it is certain that the cycle has been entirely gone through.

Well, let us take the heart at the precise moment when the ventricles distended by the blood, are at their maximum of repletion. Then they contract with a perfect isochronism; this contraction is revealed to the eye by the elevation of the intercostal space corresponding to the point of the organ, and to the hand by the concussion of this point against the thoracic wall. This exterior movement of the heart, is the resultant of many conditions: the elevation of the point, projection of the inferior half of the heart forward around the transverse axis of the ventricles or lever movement, and finally, the movement of rotation from left to right around the longitudinal axis. This last phenomenon has been well studied by Kürschner.*

At the period of contraction, which has an appreciable duration, there succeeds an abrupt stoppage which marks the commencement of the period of relaxation; the point withdraws itself from the thoracic wall, by a lever like movement from front to rear, inverse in character to the preceding, the movement of rotation around the longitudinal axis, is produced from right to left, bringing back the organ into the position it was in just before, when the ventricles commenced contracting.

Soon this state of relaxation, known under the name of pause of the heart, is broken by the contraction of the auricles; in many individuals, this contraction is revealed by a slightly perceptible undulatory movement, and limited to the region of the base; in others, there is no appreciable phenomenon.

After this, the ventricles contract anew, and the cycle recommences.

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*Kurschner, art. Herzthaetigkeit, in Wagner's Handwörterbüch der Physiologie, II Braunschweig, 1844.

Such are, to consider only the exterior movements, the phases of the motions of the heart; they may thus be resumed: 1st, contraction of the ventricles, projection and stroke of the apex. 2d, persistence of the contraction during a very short instant, but appreciable, then an abrupt stopping of the ventricles; 3d, complete relaxation of the ventricles, and contraction of the auricles up to the relaxation; this contraction is often revealed by an undulatory movement at the base of the heart.

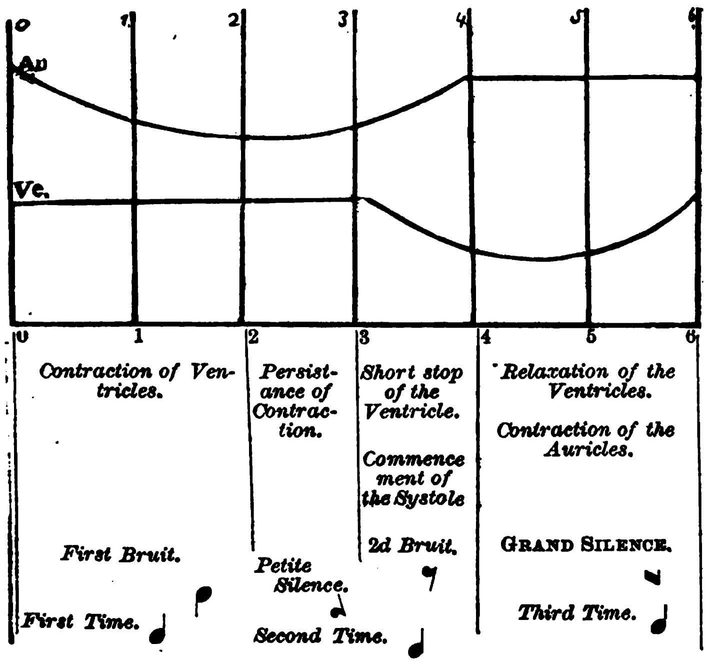
The revolution of the heart's action, comprises then, three phases of time; they can be designated by the following denominations, which have the advantage of recalling the phenomena characteristic of each of them. First time: Ventricular systote. Second time: Ventricular diastole and pause of the heart. Third time: End of the pause of the heart, ventricular systole.

The interior movements, which correspond to these diverse phases, have as their effect, the direction of the course of the blood, and the regulation of its distribution. At the moment of the ventricular systole, the sigmoid valves applied to the walls of the vessels, let the blood-wave pass into the open cavity of the aorta and pulmonary artery; in the meantime, the auriculo-ventricular valves strictly closed, hinder the reflex of the blood into the auricles. With the sudden stop, which marks the commencement of the diastole, the position of the cardio-vascular valves is reversed: the arterial valves brought down by the retrograde action of the blood in apposition with their circumferences, thus hinder the blood which is in the act of quitting the ventricle from immediately falling back, and the venous valves, or the auriculo-ventricular, largely open, no longer present any obstacle to the flow of the blood of the auricles into the ventricles; the repletion commences from this. It is aided and completed during the third time, by the contraction of the auricles.

With these motor phases of constant rhythm, there coincide the bruits or auditive phases of which the rhythm is not less fixed, and of which it behooves us to know well the connections with the diverse periods of the motor cycle. Throughout all the extent of the præcordial region one hears two perfectly distinct bruits the succession of which imitates the *tic tac* of a watch ; these are the bruits, or normal tones of the heart. But as there are three times in the revolution of motion, it is clear that there is not one sound for each time, and that a complete concordance between the bruits and times does not exist. One of the bruits, perceive, coincides exactly with the shock of the apex, and consequently with the ventricular systole; this is the bruit of the first time, first bruit, or systolic bruit. The other is heard at the second time, this is the second bruit, or diastolic bruit: but this second tone does not immediately succeed to the first, it is separated from it by a minute interval of silence (*petite silence*) which corresponds to that very short instant, during which the ventricle rests *en systole;* the bruit does not appear, until at the precise moment of the abrupt stop, which signalizes the commencement of the diastole. As for the third time, it is complete silence, this is the prolonged silence, (*le grand silence*).

Now, as to appreciate exactly the auditive phases of the revolution of the heart, it is necessary to take equal count of the silences and bruits, it is very clear that the cardiac cycle represents a triple measure, and this as well in view of the bruits as the movements. On the other side, the second bruit only represents the half of the second time, then the contraction and the relaxation of the ventricles are not equal in duration to the movements correspondent with the ventricles: if then we wish to make a graphic and faithful representation of the revolution of the heart, it is essentially necessary, that the fundamental line on which it is to be traced, should be divided into six parts; this is the only means of keeping account, not only of the phenomena in themselves, but also of the exact relations of their succession and of their duration. I have tried this representation, and the scheme which I put beneath your eyes, appears to me to render in all their details, and with a rigorous precision, the relations of these complex acts.

The superior line expresses the movements of the auricle; the curved part represents the relaxation, the rectilinear figure the contraction. The middle line, relates in the same manner, to the movements of the ventricles. Finally the inferior line is a unit divided into six parts, it indicates a complete revolution of the heart.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Commencement of the Systole
Relaxation of the Ventricles.
Contraction of the Auricles.
First Bruit.
Petite Silence.
2d Bruit.
GRAND SILENCE.
First Time.
Second Time.
Third Time.

I hope that this representative tracing will greatly facilitate your conception of these phenomena; you see that the revolutionary motion of the heart, rigorously represents a triple measure of uniform musical figures, it is composed of three crochets; but the auditive revolution, in representing it also in triple measure, by a composition more complex, the musical figure varies for each time; the first is a crotchet as is the first time of the motor measure; the second is formed of a half minim, which represents the *petit silence*, and of one crotchet for the second bruit; these two additional values, have the same duration, as the second crotchet of the measure of movements; finally, the third time of the auditive measure being one of silence, is represented by a minim, figured of equal value with that of the crotchet. The examination of the drawing, shows you beyond this, that the contraction and relaxation of the ventricles, are of equal duration, each of these states occupies the half, or three-sixths of the total unit; for the auricles, it is not the same; the diastole equivalent to four-sixths, or two-thirds of the measure, their period of activity or systole only endures two-sixths, or one-third.

I have said, gentlemen, that the cardiac sounds are heard in all the precordial region, this is true, but it exists at fixed points, where they are perceived with more clearness and more intensity than anywhere else. These points, true places of election of the auscultation of the heart, are four in number: two occupy the region of the apex, the two others are in the region of the base. Of the two fixed inferior points, one corresponds exactly with the place of the stroke of the apex, and consequently, to the fifth intercostal space of the left side, or the posterior face of the sixth rib, upon the track of the vertical mammillary line, or a little within this line; the other is situated upon the inferior fourth of the sternum, or still more precisely, toward the inferior extremity of bone, at the base of the ensiform cartilage. Approach from these stand-points, the anatomical details which I presented you in commencing, and you will see that the first of these points, appertains solely to the left ventricle, and that the second corresponds to the anterior face of the right ventricle. The two places of election of the base are also separated and on each side of the median line, the one is left, the other right. That of the left, extends from the third synchondro-sternal articulation, mounting up to the heighth of the left second intercosta space, close beside the lateral border of the sternum. That of the right, occupies the right second intercostal space, immediately in rear of the right border of the sternum. Bring to bear, as we will by-and-by, the anatomical bearings, and you will see clearly, that of the two places of election of the base, that of the left responds to the orifice of the pulmonary artery, superficially at this point, whilst that of the right is in relation to the initial segment of the aorta.

Auscult the heart in the four points designated, and on each of them, you will find the two characteristic bruits,. and with sufficient attention, you will soon establish the fact, that the bruits above, cannot be considered as the resultant of the propagation pure and simple of the bruits below. In effect, in the two places of election of the apex, the first bruit, that which coincides with the shock, is more accentuated, stronger and longer than the second, which marks the commencement of the ventricular diastole, of such a sort, that the rhythm of the two tones, exactly represents the figure of prosody, known under the name of trochee. If, the ear, being well fixed with this impression, you transport your stethoscope to one of the points of election of the base, you will find the rhythm reversed; the first bruit is feeble, short, but slightly accentuated, the second is long, clear and plainly struck; this is no longer a trochce which you hear, it is an iambic. Now, that the reversal of the rhythm clearly demonstrates that the bruits above, are not the simple propagation of those below, the same facts prove that those of the right, are not the result of the propagation of those of the left. Indeed, the fundamental tones of the heart result from the play of the valves, to-wit: the first from the sudden tension of the auriculo-ventricular valves at the moment of the systole, the second, from the collapse likewise sudden, of the sigmoid valves at the commencement of the diastole; and since these two valves are coupled in pairs, it is evident that the first tone is produced by the fusion of the clapping sounds of the aurieulo-ventricular valves right and left, and that the second is the resultant of the sigmoids clappings on each side of the median line.

When one auscults at hazard the præcordial region, without electing a place, it is the fused bruits which are heard, each of the tones perceived, is the product of two homologous bruits, the one right, the other left. But this fusion does not escape analysis, be on your guard, for the dissociation of these composite bruits, it suffices to auscult in the points of election, the precise position of which, I have indicated to you. Then, it is not the heart in its entirety, which you have under your stethoscope, it is a determinate anatomical portion which you examine, and they are the bruits produced by this distinct portion that you principally perceive; this artifice of exploration, has its results, the dissociation of the bruits naturally fused, and thus it is, that in ausculting at the apex at the place of election of the left side, you obtain especially the isolated tone of the mitral clapping (claquement) and in the place of election of the right, the isolated tone of the tricuspid clapping; it is also the case, that in the places of election of the base, you have on the left especially, the isolated tone of the pulmonary sigmoids, and on the right, that of the aortic sigmoids. I think you will readily understand the reason of the restrictive adverbs *principally* and *especiully* which I make use of; the dissociation sufficient as we will soon see, for the interpretation of pathological facts, is never absolute in the physiological state which we are considering at this moment. In ausculting over one of the four points of election, you have *principally*, I repeat it, the bruits produced under your ear by the cardiac segment examined, but these bruits are a little increased by the propagation of homologous bruits furnished by the correspondent segments of the organ. You have then *especially*, the isolated tone of one valve, but you do not have it solely and exclusively, because the homologous valvular tone comes in to reinforce it by propagation.

This restriction, which a scrupulous respect for the the truth imposes, lessons in no degree, the practical importance of the dissociation of the cardiac bruits, such as I am going to present to you. I will show you in an instant, that this decomposition is much easier in the pathological cases, than in a state of health, but we have not finished with the normal bruits of the heart.

And first of all, I ought to clear up a difficulty, which not resolved, would be sure to cast doubt and obscurity into your understanding. These bruits of the heart, originating in the orifices to which the valves are attached; how does it happen, that the maximum of these bruits, does not exactly correspond to the orifices themselves, and that our four points of election are slightly removed therefrom? This is due to two principal causes: On a level with the origin of the aorta, and pulmonary arteries, the juxtaposition of the four openings is closest, and the bruits heard there, at the junction of the superior with the two inferior thirds of the heart, are the special fused sounds, and at this point, are not susceptible of dissociation; on the other hand, it is precisely at this spot, that the apposition of the heart to the anterior laminæ of the two lungs. is most complete: now, the pulmonary tissue being a very bad conductor of sound, the intensity of the bruits in their transmission to the ear is enfeebled, and although there may be the seat of their origin, it is not there, it cannot be there, that the maximum of intensity is reached. For obtaining this maximum, it is necessary to move a little from the centre of production, where the conditions of transmission are better; the arterial bruits always propagate themselves in accordance with the course of the blood; it is here from below upward; if then you go a little above the place where these bruits have their origin, you will perceive them clearer and stronger, because the lung impede less the transmission, and because the auriculo-ventricular bruits will be disengaged. Observe therefore, that the superior points of maximum intensity, corresponds to the cylinders of the aorta, and the pulmonary artery, and not exactly to the valvular orifices. The difference moreover is less marked for the pulmonary artery, because the infundibulum raises its orifice a little above that of the aorta. The same considerations are applicable to the ventricular bruits; we hear them better where the lung no longer covers the ventricles, at the point where these bruits were partially isolated from the arterial bruits: it is for this reason, the foci of maximum intensity, have their seat at the point of the sternum.

Thus much said, a single question remains for me to examine; I pray you to redouble your attention, for the subject is one not devoid of difficulty. Now, auscultation of the heart presents four foci of election, then in each of these foci, there is perceived two bruits, it is clear then, that in the normal state, there are to be heard in the præcordial region, eight bruits or tones, four in the region of the base, and four in that of the apex. These eight bruits are isochronous, four to four; there are then four first bruits, one in each place of election, four second bruits, likewise distributed in the four *maximum points.* Now, observe the question which presents itself: These eight bruits, have they all eight, an existence proper and real? Or do there rather exist but four bruits, the four others being simply phenomena of propagation? This last interpretation is very generally adopted. To account for the apparent duplicity of the bruits at each orifice, the partisans of this opinion have resource to the following explanation. When one auscults the region of the apex, it is very true, say they, that he hears two bruits, but the first alone originates in the ventricle, it is that of the auriculo-ventricular clapping; as to the second tone, it is the propagation of the bruit produced at the base by the clapping of the sigmoid valves. Let one on the contrary auscult at the base, and he still hears two tones; but here the first results from the transmission of the auriculo-ventricular bruit; the second alone originates at the place, formed as it is, by the coming down of the sigmoids. Thus, according to this view, there are only four real bruits, two auriculo-ventricular tones, and two sigmoids: at the apex, the first bruit originates at the place, the second is a bruit propagated from the base; at the base, the first bruit is propagated from the apex, the second originates at the place.

For my part, I do not accept this restrictive interpretation, and range myself entirely beside the theory of eight bruits, which I think I shall be able to expose to you more completely and clearly, than has hitherto been done. According to this theory, to which Skoda has attached his name, but the principal fact of which had been perfectly seen by our wise master Professor Bouilland, the double character of the heart sounds at each of the orifices, is not a simple appearance due to the phenomena of propagation; the duplicity is real, eight beats are the product of one revolution of the heart. Do not become frightened by this number, for I assert to you that the clinical facts will thereby become more clearly and easily appreciable. It is, nevertheless from the pathological state, that the argument is drawn, which ruins the theory of the four bruits. In certain cases, a normal tone, A, disappears, and despite this perfectly established disappearance, there is found at another point the bruit A', which according to the theory which I combat, reults from the propagation of the first. It is very evident, that bruit propagator A no longer existing, the bruit A' ought to be another thing than a bruit propagated.

The argument is unique, but it is peremptory. Permit me to insist upon it—the thing is worth the trouble.

In aortic insufficiency, the second normal tone disappears completely from the place of election from the right to the base; auscult then the point, that is to say the left ventricle which gives origin to the aorta, and you will nevertheless hear a second ventricular tone, more feeble than in the physiological condition, but perfectly perceptible. Now, the second aortic tone has disappeared; it is not possible to admit on the other hand, that the sigmoid tone of the pulmonary artery, originating at the ventricle, propagates itself by transverse vibration, across the inter-ventricular passage, up to the left ventricle; then the second tone, perceived at the point of its origin, is a second ventricular tone. Likewise, in mitral-insufficiency, the first normal tone disappears from the apex, which does not hinder you from finding it perfectly clear, at the place of election, of the auscultation of the aorta; for the same reason, this first aortic bruit, cannot be a bruit of ventricular propagation, it is a bruit originating at that place. Many times hitherto have I demonstrated these phenomena at the bedside of the patient, and we have yet remaining in our service two individuals, whose examination will not leave the least doubt: one is affected with pure aortic insufficiency, the other carries a mitral insufficiency equally pure. In our first, you hear at the apex a second ventricular bruit, which ought to fail if the theory of propagation had been exact; in the second, you perceive over the aorta a first tone, which ought to fail according to the same hypothesis.

The condition being the same in the right heart and the left, the existence of eight bruits is not an appearance, it is a reality. Is it to be said that the propagation may be without any cause in the production of the tones in question? Certainly not, but it does not alone have an influence, and each of these tones is composed of an element propagated, and an element originating at the place. This you will comprehend better, it you will consider the producing condition of these forces. The first arterial bruit, aortic or pulmonary, results from the sudden expansion of the vascular wall, under the influence of the blood wave emitted by the systole of the ventricles. This expansion accords perfectly, by it abruptness and rapidity, with the clear and short bruit heard at the base of the heart, at the moment of ventricular contraction; this dilatation of the arteries constitutes the arterial diastole, which for the aorta and pulmonary artery, coincides with the cardiac systole. Such is, for the first bruit of the base, the element originating in place; it is reinforced by the propagation of the auriculor-ventricular clapping which is isochronous. The second bruit of the apex has for its element of reënforcement the sigmoid clapping, that is to say, the second bruit of the base; as to its proper element, the interpretation is more obscure: we admit with Skoda, that it ordinarily results from the sudden irruption of blood into the ventricle, at the moment of the sudden stoppage which signalizes the commencement of the diastole. To resume, two bruits originate on a level with each of the orifices of the heart: in the arteries (region of the base), the first bruit is especially a bruit of propagation added to an element originating in place; in the ventricles, it is the second bruit which is a phenomenon of transmission, with the accessory element of origin in place

The eight cardiac bruits fused two and two by a perfect isochronism, give origin to four fundamental tones, two of which are heard in the regin of the base, and two in the region of the apex. I do not ignore the complexity of these phenomena, but I hope that the tables which I present you will facilitate the understanding and remembrance of them. Proceeding from the simple to the composite, I have in the first table, only separated the two superior and the two inferior bruits; in the second, I have pushed the analysis farther, and taking into account the place of election at the fixed situation which I have indicated to you, I have represented the complete and real separation of the eight bruits of the heart, such as the clinical observer ought to recognize to appreciate the divers conditions of the pathological state.

BRUITS OF THE HEART—AUSCULTATION OF THE BASE—ARTERIAL BRUITS.

FIRST BRUIT.—Sudden expansion of the aorta and pulmonary artery at the instant of the systole (*element originating in place*). Sound of auriculo-ventricular clappings (*element propagated*).

SECOND BRUIT.—Sudden lowering of the aortic and pulmonary sigmoid valves at the instant of the diastole, (*tone originating in place*).

AUSCULTATION OF THE APEX—VENTRICULAR BRUITS.

FIRST BRUIT.—Sudden tension of the mitral and tricuspid valve, at the instant of the systole (tone originating in place).

SECOND BRUIT.—Sound of aortic and pulmonary sigmoid tones (*element propagated*). Sudden irruption of blood into the ventricles at the commencement of the diastole (*element originating in place*).

BRUITS OF THE HEART COMPLETELY SEPARATED.—Auscultation of the Base.

	ON THE RIGHT.	ON THE LEFT.
Foci of election of the bruits.	**First Bruit.**—Sudden expansion of the aorta at the moment of systole (*element originating in place*). Sound of mitral clapping (*element propagated*).	**First Bruit.**—Sudden expansion of the pulmonary artery at the moment of systole, *element originating in place*). Sound of tricuspid clapping (*element propagated*).
Arterial Bruits.	**Second Bruit.**—Sudden lowering of the aortic sigmoid at the moment of the diastole, (*tone originating in place*).	**Second Bruit.**—Sudden lowering of the pulmonary sigmoid valves at the moment of the diastole, (*tone originating in place*).

AUSCULTATION OF THE APEX.

	UNDER THE STERNUM.	AT THE APEX.
Foci of election of the region of apex.	**First Bruit.**—Sudden tension of the tricuspid valve at the moment of the systole (*tone originating in place*).	**First Bruit.**—Sudden tension of the mitral valve at the moment of the systole, (*tone originating in place*).
Ventricular Bruits.	**Second Bruit.**—Sound of pulmonary sigmoid tone (*element propagated*). Sudden irruption of blood into the right ventricle at the beginning of the diastole (*element originating in place*).	**Second Bruit.**—Sound of aortic sigmoid tone, *element propagated*). Sudded irruption of blood into the left ventricle at the commencement of the diastole, (*element originating in place*).

It results from the conditions producing the cardiac bruits, that the bruits or normal *tones* of the heart are all solid sounds, that is to say that they are produced by the vibration of solid parts (valves, ventricular or arterial walls). The pathological bruits designated under the name of *bruits de souffle* or *murmurs* are on the contrary liquid bruits; they are engendered by the abnormal vibration of the blood in its intra cardiac passage. The *bruits de souffle* or murmurs are then not the normal bruits altered and transformed, they are bruits of new formation, which substitute themselves for the physiological tones; the same lesion which gives origin to the *bruits de souffle*, destroys the generative cause of the normal tone, and in the orifice or the orifices where such lesion exists, the physiological bruit, the solid bruit no longer exists, only the pathological bruit, the liquid bruit strikes the ear.

With this principle, and our table of the complete dissociation of the cardiac bruits, nothing is simpler than the seizing and retaining forever the semiological value of the bruits de souffle. It is here that you come to receive the fruit of the rather painful labor I have imposed upon you, in making you understand the theory of the eight normal tones which I have for a long time adopted.

Resort now to my table, and seek for yourselves what pathological bruit will result from mitral insufficiency; without ever having observed it, you can, you ought to foresee it. The mitral valve, having become insufficient, can no longer close its orifice, it can no longer stretch and clap audibly at the moment of the systole; then the first left ventricular tone ought to disappear. And as the hiatus formed by the inocclusion of the valve permits the reflux of blood into the auricle when the ventricles accomplish their movement of concentric contraction, the retrograde blood entering into collision with the wave which tends to descend from the auricle, the vibrations in the liquid column produce a *bruit de souffle* at a spot which takes the place of the ventricular tone as to time and seat; the *bruit de souffle* is then in the *first time*, and is situated at the apex, the focus of the bruits of the left ventricle.

If there be an insufficiency of the tricuspid valve, the conditions being the same, we have the same effects; a souffle in the first time replacing the tone produced in the sound state by the sudden tension of the valve; the souffle being seated beneath the sternum, the focus of the bruits of the right ventricle.

It is in these pathological cases then that there exists a single souffle in the region of the apex which you can establish, and the reality of the separation of which I have spoken to you, and the importance of my foci of auscultation have been limited with anatomical precision. When in effect the first ventricular tone has disappeared in one of the inferior foci, and a souffle exists in its place, you hear marvellously well, the first normal tone in the other focus. For mitral insufficiency, which is one of the most frequent lesions; that can be verified daily. You have a souffle in the first time at the point; but under the sternum, you find the first right ventricular tone with all its normal qualities. The same thing occurs in isolated tricuspid insufficiency. See that old man who is in No. 20 of St. Charles' ward, he has an intense souffle in the first time under the sternum; at the apex the first normal tone of the left ventricle is clearly perceptible; it may be said of him in passing, that the right auriculo-ventricular insufficiency is consecutive to chronic lesions of the respiratory apparatus.*

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*This man succumbed some weeks later. The autopsy of the heart verified the diagnosis made during life. My colleague and friend, Doctor Blachez, being present at the examination, tells me that he had never before observed so considerable a dilatation of the tricuspid orifice. The integrity of the mitral orifice was not less remarkable.

Let us apply the same method to mitral narrowing; the response to be complex, is not more difficult, if you do not lose sight of the table which guides us. If the mitral orifice is narrowed, the blood of the auricle no longer precipitates itself very freely or powerfully in the ventricle for the production of the tone at the commencement of the diastole; in return, the blood vibrates in passing over the circumference of the abnormally narrow passage which it traverses; a souffle originates which is necessarily at the apex, at the focus of the left ventricular bruits, and generally at the second time. I pray you, gentlemen, refer to the scheme in which I have represented the relations of the movements and bruits, and you will comprehend at a glance why the souffle of mitral narrowing does not constantly coincide with the second time. In the beginning of the diastole, that is to say, in the second half of the second time, the auricle does not contract, the blood falls into the ventricle by its own proper weight, and it may well be that at this very instant the force and rapidity of the fall may not be very great for producing sonorous vibrations in the liquid column, and by consequence a *bruit de souffle.* But things being in this state, observe that a little later, at the third time of the revolution of the heart, a new agent intervenes; this is the contraction of the auricle; to the quasi passive fall of the blood, there is added an active propulsion, the pressure of the liquid upon the orifice further narrowed; the vibrations which are inappreciable in the first period of the fall, become perceptible; the souffle originates, but after the second time; it is lengthened out from an instant of the third time or grand silence, up to the début of the following systole: This is the presystolic souffle, souffle of the third time, of which the theory so discussed loses all difficulty in our interpretation of the movements and the bruits of the heart. It is not less easy of comprehension, that the pressure of the liquid upon the straitened mitral can never be very strong to produce appreciable vibrations; in this case, which is besides rare, the mitral narrowing is mute, it does not determine bruit from souffle. Thus souffle at the second time, souffle at the third time or presystolic souffle, total absence of souffle, are here the three possible effects of mitral narrowing. There is even a fourth phenomenon sometimes observed, when the narrowing does not produce a souffle; this is a doubling of the second tone of the heart presenting an especial character; it is heard on a level with the left ventricle, and it is not found on a level with the aorta. This is then, to speak the truth, a doubling of the second ventricular tone; one hears then at the apex three tones, the succession of which imitates more or less well the rhythm of a horse's galop, or of the roll-call of the drum. The explanations of this ventricular doubling, which ought not to be confounded with the doubling of the second arterial bruit of the base, are various; it is generally attributed to a defect of isochronism of the two ventricles; by this view observe you, the doubling is not produced in one ventricle singly; if there are two second successive bruits instead of a single one only, this is because that of the left ventricle, for example, is heard after that of the right ventricle. That it may be thus in certain cases, I do not wish to deny, but certainly this interpretation is not always good. I am certain of having heard the doubling of the second bruit at the apex when it could not be heard beneath the sternum, a fact incompatible with the theory of defect of isochronism between the two ventricles. For myself, I think that the doubling of the second ventricular bruit in the mitral narrowing can only be produced in the diseased ventricle, and after the following manner: The second ventricular tone, do not forget it, is composed of two elements—an element propagated, that is the clapping of the aortic sigmoid valves, and an element originating in place, that is the shock of blood upon the wall of the ventricle at the beginning of the diastole. In the physiological state, these two elements are perfectly fused into a single bruit; but if the orifice is narrowed, the second element can linger after the first, which is not influenced by the lesion, and there is then found a double second bruit, whilst beneath the sternum, the second right ventricular tone is entirely normal. This interpretation appears to me the only one admissible for the case where the doubling is not heard in the two ventricular foci.

I pass over the tricuspid narrowing, a lesion still rarer than the insufficiency of the same name, and which will produce under the sternum the same effects which determine the mitral narrowing at the apex.

The lesions of the base will detain us a less time. When one of the arterial orifices is narrowed, the expansion of the vessel at the moment of the cardiac systole is less, because the wave is less powerful; the first tone disappears, or in every case is masked by the *bruit de souffle*, which originates at the narrowed orifice, and which occupies the time and place of the tone which has disappeared. This is then a souffle in the first time and at the base; two orders of character, permit the distintinguishing between that of the aorta and the pulmonary artery. The aortic souffle propagates itself in the vessels of the neck, the pulmonary suffle never. Again, consult the table, and you will see that the souffle of the aorta has its maximum of intensity focussed on the right, and that of the pulmonary artery a focus correspondent to the left.

Like considerations exist for the arterial insufficiencies which determine the souffles of the second time, distributed in the same manner between the two foci of the base; that of the aortic insufficiency has its maximum in the focus of the right, that of the pulmonary insufficiency, seats itself in the left focus. It is upon this last point alone, however, that I wish to insist; it is not very well known. When I tell you that the aortic bruits have their maximum in the right focus, that is to say, in the second intercostal space, immediately without the right border of the sternum, I do not wish to say that they are not perceptible on the left; I only intend to say that they are less marked and strong; it is then by comparison that you ought to judge of the true seat and real origin of these bruits. If a souffle of the base is positively stronger in the second right space than the second left space, if on the right no vestige is found of the second normal bruit, whilst it may be heard over the lest, it is an aortic souffle; if, on the contrary, you are convinced by repeated examinations that the souffle is more intense in the left focus, that is to say on a level or a little above the third synchondro-sternal articulation, if in the left point, there is found no vestige of the second normal bruit, whilst it is heard on the right, you may rest assured that it is a pulmonary souffle. For the first case, you have in your presence at this moment, as clear an example as I could wish. It is that of a young woman who has been affected with cerebral embolism, and consecutive softening; in her you can hear a souffle at the second time at the base, with propagation into the vessels of the neck; this souffle is very clear in the second right intercostal space, and is very feebly heard over the left, and over the sternal articulation of the left, and over the sternal articulation of the third left cartilage, you will perceive with all their normal characters, the two clappings of the pulmonary artery.

The lesions of this artery are very rare in the adult, so that I have no other example to present to you. But in an interesting work, Professor Erichsen has collected together many cases on the occasion of one case of dilatation observed by himself; these cases to the number of nine, all followed by autopsy, are characterized by stenosis, insufficiencies, or aneurisms. But what interests us, is, that in all these facts without exception, the *bruits de souffle* systolic and diastolic had their maximum of intensity on the left side, either on a level with the sternal articulation of the third cartilage, or in the middle of the second intercostal space; whilst in the points corresponding to the right, a little to one side of the sternum, there were found the normal tones of the aorta*. Furthermore, in a case of stricture of the pulmonary orifice observed by Aran, there was a very strong and rude souffle on a level with the sternal articulation of the third left cartilage, and there was no trace found of a souffle over the aortic tract. There is then no possible doubt of the exactitude of one foci of auscultation.

I terminate here these general considerations; you, however, now have it in your power to cause the study of these special cases to bear fruit, and I am convinced you will soon recognize that the dissociation of the cardiac bruits into their eight component elements, and the division of these last between four distinct foci, are the two surest guides for clinical conclusions.

ART. II.—HOSPITAL MEDICAL COLLEGE OF VIRGINIA.—CASE UNDER THE CARE OF HUNTER McGUIRE, M.D., Professor of Surgery. Reported by JOHN M. UPSHUR, M.D., Richmond, Va.

Emma B—, of Buckingham county, Va., was sent to the hospital by the kindness of Dr. Fontaine. She is a bright mulatto, æt. 21 years, of medium statue and form. She states that about six months ago she was delivered, after a labor which lasted fifty hours, of her first child. No instruments were used. She noticed dribbling of urine as soon as she was permitted to leave her bed. Examination of the vagina revealed a fistule which readily admitted the finger into the bladder, involving part of the base and part of the *trigonum vesicæ.* It was eliptical in shape and ran upwards and towards the left side; its long diameter corresponding nearly with the long axis of the vagina.

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* J. Erichsen, Ein Beitrag zur Casuistik der Erkrankemgen der Arteria pulmonalis.—Petersburger Med. Zeitschrift, I.

October 18th. After a few days of preparatory treatment, chloroform was given, the patient was placed on her left side and the parts exposed with the duck-bill speculum. A soft elastic male catheter was then introduced through the urethra into the bladder, and retained there until the operation was completed. This conducted the urine off as it was poured into the bladder and prevented its contact with the raw surface of the wound. The edges of the fistule were then pared and five (5) interrupted silver wire sutures introduced. The lips of the wound were then brought together, the wires twisted, cut off and turned down. The duration of the operation was forty minutes. In the after treatment, opium was freely given to control the bowels.

During the first day the male gum catheter was introduced every fourth hour, and the urine drawn off; at the end of that period the catheter was used every sixth hour. The vagina was very carefully and gently syringed with tepid water every morning. The sutures were removed on the tenth day; on the third day after the sutures were removed the woman was permitted to get up, and the next day she was discharged, cured,

In his remarks upon this case, Dr. McGuire attached some importance to keeping the bladder thoroughly drained of urine during the operation. It was easily effected by introducing through the urethra a large male elastic catheter before the edges of the fistule were passed, and retaining it in the bladder until the operation was finished. The urine was thus prevented from coming into contact with the freshened edges. Raw surfaces permitted to remain for any length of time in contact with urine, are acted upon as by an animal poison, and he had little doubt that union was sometimes prevented in this way. He thought it better, when practicable, as it always was in hospitals, to introduce a catheter and relieve the bladder every four or six hours after the operation, than to pass Sims' sigmoid catheter into the bladder and leave it there. If the catheter is left in the bladder it is a source of great discomfort to the patient, sometimes it becomes covered with phosphatic deposits, or gets stopped up entirely. However closely it may fit the urethra when first introduced, it becomes loose in a few hours and the urine escapes between the walls of the urethra and the instrument. This is not by any expulsive effort of the bladder, but by capillary attraction. This same law in continuous operation for days may carry some of the urine into the vagina and in contact with the fistule. If the fistule is low down the vesical end of the catheter may also press injuriously upon the sutures. He did not think it improbable that the retained catheter sometimes interfered with union by the amount of inflammation it occasioned.

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

ABINGDON, WASHINGTON CO., VA., June 11, 1870.

As Corresponding Secretary of the Abingdon Medical Society, I am requested to enclose you the following proceedings of this society, and ask that they be published in your highly valued journal. The attention of the medical profession in this locality having been called to an article in one of the papers, urging the importance and necessity of an endeavor on the part of the medical men of the State to obtain the passage of a law by the Legislature of Virginia which shall, by its provisions, protect the medical profession and the public at large from the impositions of ignorant persons, heretofore licensed to practice medicine, but nevertheless totally wanting in the proper qualifications to do so: we desire hereby to testify our appreciation of the importance of such a law, and in order to secure its passage, we have adopted this plan to bring to our assistance the united voice and influence of the profession in the whole State. Below will be found the preamble and resolutions adopted by this society at its last meeting, as a basis upon which to memorialize the Legislature. We would be glad to have this document perused by all the patrons of your Journal throughout this State; and should the opinions expressed meet the approval of the profession at large, we would like them, as a body, to unite with us in lending their influence to bring this subject before the Legislature at its next sitting.

The preamble and resolutions are as follows, viz.:

WHEREAS—In the general disorganization of society and government, consequent upon the late war, it becomes of first importance in the reconstruction and reorganization of all the varied departments of society and government to throw around each and every branch such restrictions and safeguards as shall, in the wisdom of our people, best conduce to their elevation and protection; and, whereas, the present time, in which we are just beginning to enter upon a better and more propitious era of our State's history, seems peculiarly suited to the discharge of these duties, by the law-making power of our land; and, whereas, the development and elevation of the medical profession proper, is a matter of paramount importance, not only to them, but to the public at large; and whereas, the State is now flooded with men licensed to practice medicine, regardless of any of the acquirements absolutely essential to render them competent to treat diseases; therefore,

Resolved, That we, the Abingdon Medical Society, do hereby most earnestly petition the Legislature of Virginia to make such laws as shall in future shield our profession from the infringements of ignorant and unqualified men, and afford a safe-guard for our continual advance in scientific knowledge and usefulness.

Resolved, That in asking the same from the hands of the Legislature, we do not presume to claim more than is already granted to the kindred profession of law, in which the qualifications demanded of a licentiate are "a certificate of honesty and good moral character," and also "a certificate of proficiency from three Judges of the State."

Rerolved, That in our opinion a similar provision should be made in the law in reference to medical licencentiates, requiring of them also, a certificate of honesty and good moral character, and a diploma from a chartered medical college, or in default of such diploma, a certificate of proficiency from an examining board of regular graduates, appointed for the purpose in the State, before being allowed to practice medicine.

Resolved, That this Society approve the call to reorganize the Medical Society of Virginia, and that the members will use their influence to accomplish that object, invoking at the same time the *combined wisdom* of that body in behalf of the subject herein contemplated. T. E. BROWN, MD.

SPRING HILL, TENN., February 18, 1870.

I sent you a communication a few days since, giving a case of imperforate hymen, and a case of puerperal mania. If you choose to publish either of them, you may append the following remarks in their proper place:

Medical authors notice the frequency of peritonitis and metritis following the operation of imperforate hymen. This is probably due to a zymotic action in the menstrual fluid, as it comes in contact with the air, ending in septicæmia, which is the essential cause of peritonitis. The use of the sulphites, as recommended by Dr. Polli, of Milan, would be advisable after such an operation. I am in the habit of prescribing them after every case of difficult labor.

The case of extraordinary fecundity which I reported last year, has again been delivered, in a little less than twelve months from the last confinement, of another child, and both mother and child are doing well. This is the twenty-sixth child, and the mother is not yet thirty-six years old. I may as well repeat, that she is a colored woman, and had six children at single birth, all of whom are living; then followed twins eight times in succession; then triplets, which I delivered, and now a single birth. All the children of plural births died in a few days or a few months after birth, excepting one of the triplets, which was still-born. The interval between her plural births has not been longer than twelve months. Yours, etc., A. C. White, M.D.

Winchester, Tenn., May 1, 1870.

I sent you, sometime since, a report of a case of strangulated inguinal hernia, in which coffee was used with seeming benefit. I was called on the night of the 22d ult., to see the same patient, when I found him in precisely the same condition as before. After using taxis for a short time, with patient's hips well elevated, without success, I began the use of the coffee in the same manner as before. After the second cup had been given, I was called to an obstetrical case, leaving directions for the coffee to be continued, and for patient to endeavor to reduce the tumour if he found any relaxation. I went to see him about daylight next morning, and found him comfortable, and hernia reduced. He told me that after he had taken the fourth cup of coffee, he with little difficulty returned the gut, which *went back with a gurgling sound.* I think I can fairly say, that in this case at least the coffee was of benefit. I send you this that you may make any comments on it that you may deem necessary. Yours respectfully,

E. C. Marks, M.D.

Bowling-green, June 15, 1870.

A case came under my observation lately, interesting on account of its novelty, rather than from any practical value attached to it, but a short report of which may pay for the space it may occupy in your Journal:

A lady of thirty-five, the mother of two children, had a catamenial suppression for two months; one period some 18 months since, ended in what she supposed ordinary menstration, but in a short time she began to suffer somewhat in the uterine region or abdominal, and probably both. The symptoms indicated chronic irritation in these parts, and were variously denominated nervous and neuralgic. Some two months since she consulted me about her case, at which time she was suffering greatly in her bowels, with much impaired health. The passages from the bowels clearly indicated ulceration. Semi-organised tissues were passing freely, which for a while admitted of no satisfactory explanation, but within the last few weeks she has passed by the bowels several parts of the bony anatomy of a fœtal skeleton, several vertebræ, scapula with much well preserved soft tissues or tendons and cartilage. The health of the lady is still delicate, not much improved, though now attending in part to her household duties. I suppose it to be a ease of fallopian pregnancy, though happening frequently, not often resulting in relief through the bowels. Yours, L. C. PORTER, M.D.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex Damnatur cum nocens Absolvitur."

A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN. By J. FORSYTH MEIGS, M.D., and WILLIAM PEPPER, M. D. Fourth Edition of Meigs' Disease of Children. Philadelphia: Lindsay & Blakiston. 1870.

The careful student will recognise in this work an old friend, Meigs on the Diseases of Children. The demand for this old favorite has induced the editors and publishers to issue this volume. It is in all respects a great improvement on the original work. As to the capacity and ability of those who have undertaken the work, if there had ever been any doubts upon the subject, an examination of this volume would remove them; their editorial labors have been most commendably performed. The publishers are not surpassed by any in this country in all of those characteristics which, when manifested, give (as they have given to this House) an honorable and distinguished reputation.

This work has been much enlarged, amended and improved. The most notable additions and improvements are to be found in connection with the following subjects: Convulsions; thrush; chorea; tracheotomy in croup; parasitic skin diseases, etc. Many articles have been completely rearranged. There appears for the first time in this work chapters on the following subjects: cyanosis; diseases of the heart; diseases of the cæcum and appendix vermiformis and intussception; chronic hydrocephalus; tetanus; atrophic infantile paralysis; facial paralysis; rheumatism; diphtheria; mumps; rickets; tuberculosis; infantile syphilis; typhoid fever and sclerema. This work is eminently practical in character and much space is devoted to the treatment of infantile disorders; while efficient attention has been bestowed upon the etiology and pathology of the varied subjects under review. There can be no doubt but that it will be very popular with the members of the profession. It is a mirror of all that is now known of a valuable character in common with the protean ailments of childhood, and it is recommended unreservedly to those who need a volume of this description.

RENAL DISEASES—A CLINICAL GUIDE TO THEIR DIAGNOSIS AND TREATMENT. By W. C. BASHAM, M.D. With Illustrations. Philadelphia: H. C. Lea, 1870.

A few years since, it was difficult to obtain a simple, concise and efficient manual on renal diseases. Now there are many that are excellent, and fully acceptable. There are none better than this, the last contribution to the valuable list. The author's experience as a clinical teacher in a large London Hospital, has been very large, and he deserves infinite credit for embodying in a small work of 300 pages information which usually is to be obtained only after a careful analysis of double this space. The classification of the diseases of the kidney is remarkably simple, and the dirctions for the examinations of urine can be easily understood by those who have paid even the most superficial attention to this subject. If most authors would adopt the simple pathology, rational arrangement and lucid description of renal diseases so conspicuously manifest in this volume, this part of medical literature would cease to be the pons asinorum of the young student, or the terra incognita of the practitioner. This manual is all that could be desired, and will be welcomed by all as a useful guide and efficient teacher.

DISEASES AND INJURIES OF THE EYE—THEIR MEDICAL AND SURGICAL TREATMENT. By GEORGE LAWSON, F. R. C. S. Philadelphia: Lindsay & Blakiston. 1869.

Nothing short of a long analysis can give a bettter conception of this work than the following terse, yet full, description from the pen of a distinguished English writer: "This handy and beautifully printed volume is as good in the quality of its contents as it is attractive to the eye. Mr. Lawson has long been known as an ophthalmic surgeon; he has enjoyed a long experience; he has the faculty of telling his story clearly. He has given us a manual of moderate size, in which the practitioner will find short but clear descriptions and directions for the treatment of every kind of eye disease." The American edition is fully entitled to equal praise. It is small, in reach of all, well printed and well prepared in every respect.

CLINICAL LECTURES ON DISEASES OF THE URINARY ORGANS. By Sir HENRY THOMPSON. American Edition. Philadelphia: H. C. Lea. 1869.

These lectures were delivered by one who is now regarded as the best clinical lecturer and one of the ablest teachers in England. They were originally published in the London Lancet and are doubtless familiar to the many readers of that journal. They attracted marked attention among not only specialists but general practitioners. They have become a conspicuous element in the medical classics of every library, and will doubtless be studied and admired, when the memory of their distinguished author forms the valued heritage of physicians yet unborn. No contribution to medical literature has been more admired; none is more valued; none is more deserving the admiration and confidence which it has uniformly inspired; none is more unreservedly recommended to those who desire to purchase a concise and comprehensive treatise on subjects treated so ably, interestingly and efficiently. The paper, typography, illustrations and binding are in all respects excellent.

MISCELLANEOUS.

"Non Omnes Eadem Mirantur Ament Que."

Sir James Y. Simpson, after an elaborate reply to Dr. Jacob Bigelow, of Boston, Mass., on anæsthesia, thus sums up the literature of this subject; these were the last lines he ever wrote:

If we try to put into a summarized form the data[*] which we have been discussing regarding the introduction of anæsthesia in America and this country, it appears to me that we might correctly state the whole matter as follows:

1. That on the 10th December, 1844, Dr. Wells had, at Hartford, by his own desire and suggestion, one of his upper molar teeth extracted without pain, in consequence of his having deeply breathed nitrous oxide gas for the purpose, as suggested nearly half a century before by Sir Humphrey Davy.

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[*] You must kindly excuse me if some of the data are not strictly accurate in every point, as you know how difficult it is to make medical aphorisms quite correct; for example, in the inscription which you represent as cut upon the monument, lately erected at Boston, to anæsthetics, namely, "To commemorate the discovery that the inhaling [the inhalation] of ether causes insensibility to pain, first proved to the world at the Massachusetts General Hospital, in Boston, October, A.D. 1846;" there are, it appears to me, two errors. First, ether and sulphuric ether are two terms not at all synonymous, and still you have inserted the former for the latter. Secondly, it is not strictly true that the effects of sulphuric ether were "first proved to the world in operations at the Massachusetts General Hospital." For to cite the more correct statement of Dr. Channing: "These operations were first performed in private practice, and immediately afterwards upon patients in the Massachusetts General Hospital." (Channing "On Etherization," 1848, p. 26).

2. That after having with others proved, in a limited series of cases, the anæsthetic powers of nitrous oxide gas, Dr. Wells proceeded to Boston to lay his discovery before the Medical School and Hospital there, but was unsuccessful in the single attempt which he made, in consequence of the gas-bag being removed too soon, and that he was hooted away by his audience, as if the whole matter were an imposition, and totally discouraged.

3. That Dr. Wells' former pupil and partner, Dr. Morton, of Boston, was present with Dr. Wells when he made his experiments there.

4. That on the 30th September, 1846, Dr. Morton extracted a tooth without any pain, whilst the patient was breathing sulphuric ether, this fact and discovery of itself marking a new era in anæsthetics and in surgery.

5. That within a few weeks the vapor of sulphuric ether was tried in a number of instances of surgical operations in Boston—Dr. Morton being generally the administrator: and ether vapor was established as a successful anæsthetic in dentistry and surgery.

6, That in January, and the subsequent spring months of 1847, the application of sulphuric ether as an anæsthetic in midwifery was introduced, described in our medical journals, and fully established in Edinburgh, before any case with it was tried in Boston or America.

7. That on the 15th November, 1847, the anæsthetic effects of chloroform were discovered in Edinburgh, and that it swiftly superseded in Scotland and elsewhere the use of sulphuric ether, and extended rapidly and greatly the practice of anæsthesia in surgery, midwifery, etc.

I am very sorry to have taken up so much of your time and my time with such a petty discussion as the present. It has extended to too great a length; but I am a sad invalid just now, and quite unable to write with the force and brevity required. With many of our profession in America I have the honor of being personally acquainted, and regard their friendship so very highly that I shall not regret this attempt—my last perhaps at professional writing as altogether useless on my part, if it tend to fix my name and memory duly in their love and esteem. Yours, J. Y. SIMPSON.

Dr. Jacob Bigelow, Boston.

RIP VAN WINKLE, M.D.

BY DR. OLIVER WENDELL HOLMES, BOSTON, MASS.

AN AFTER DINNER PRESCRIPTION

Taken by the Massachusetts Medical Society, at their meeting held May 25th, 1870.

CANTO FIRST.

Old Rip Van Winkle had a grandson, Rip,
Of the paternal block a genuine chip;
A lazy, sleepy, curious kind of chap;
He, like his grandsire, took a mighty nap,
Whereof the story I propose to tell
In two brief cantos, if you listen well.

The times were hard when Rip to manhood grew;
They always will be when there's work to do;
He tried at farming—found it rather slow—
And then at teaching—what he didn't know;
Then took to hanging round the tavern bars;
To frequent toddies and long-nine cigars,
Till Dame Van Winkle, out of patience, vexed
With preaching homilies, having for their text
A mop, a broomstick—aught that might avail
To point a moral or adorn a tale,
Exclaimed—"I have it! Now then, Mr. V.!
He's good for *something*—make hime an M.D."!

The die was cast; the youngster was content;
They packed his shirts and stockings, and he went.
How hard he studied it were vain to tell—
He drowsed through Wistar, nodded over Bell,
Slept sound with Cooper, snored aloud with Good;
Heard heaps of lectures—doubtless understood—
A constant listener, for he did not fail
To carve his name on every bench and rail.

Months grew to years; at last he counted three,
And Rip Van Winkle found himself M.D.
Illustrious title! in a gilded frame
He set the sheepskin with his Latin name,
RIPUM VAN WINKLUM, QUEM we—SCIMUS—know
IDONEUM ESSE—to do so and so;
He hired an office; soon its walls displayed
His new diploma and his stock in trade,
A mighty arsenal to subdue disease
Of various names, whereof I mention these;
Lancets and bougies, great and little squirt,
Rhubarb and Senna, Snakeroot, Thoroughwort,
Ant. Tart., Vin. Colch., Pil Cochiæ and Black Drop,
Tinctures of Opium, Gentian. Henbane, Hop,
Pulv. Ipecacuanhæ, which for lack
Of breath to utter men call Ipecac,
Camphor and Kino. Turpentine, Tolu,
Cubebs, "Copeevy," Vitriol—white and blue,
Fennel and Flaxseed, Slippery Elm and Squill,
And roots of Sassafras and "Sassaf'rill,"
Brandy—for colics—Pinkroot, death on worms—
Valerian, calmer of hysteric squirms,
Musk, Assafœtida, the resinous gum
Named from its odor—well, it does smell some—
Jalap, that works not wisely but too well,
Ten pounds of bark and six of Calomel.

For outward griefs he had an ample store,
Some twenty jars and gallipots, or more:
Ceratum simplex—housewives oft compile
The same at home, and call it "wax and ile;"
Unguentum Resinosum—change its name,
The "drawing salve" of many an ancient dame;
Argenti Nitras, also Spanish flies,
Whose virtue makes the water-bladders rise—
(Some say that spread upon a toper's skin
They draw no water, only rum or gin)—
Leeches, sweet vermin! don't they charm the sick?
And Sticking-plaster—how it hates to stick!
Emplastrum Ferri—ditto *Picis*, Pitch;
Washes and Powders, Brimstone for the——which,
Scabies or *Psora*, is thy chosen name
Since Hahnemann's goosequill scratch'd thee into fame,
Proved thee the source of every nameless ill,
Whose sole specific is a moonshine pill,
Till saucy science, with a quiet grin,
Held up the Acarus, crawling on a pin?
—Mountains have labored and have brought forth mice:
The Dutchman's theory hatched a brood of—twice
I've well nigh said them—words unfitting quite
For these fair precincts and for ears polite.

The surest foot may chance at last to slip,
And so at length it proved with Doctor Rip.
One full-sized bottle stood upon the shelf
Which held the medicine that he took himself;
Whate'er the reason, it must be confessed
He filled that bottle oftener than the rest:
What drug it held I dont presume to know—
The gilded label said "Elixir Pro."

One day the Doctor found the bottle full,
And, being thirsty, took a vigorous pull,
Put back the "Elixir" where 'twas always found,
And had old Dobbin saddled and brought 'round,
—You know those old-time rhubarb-colored nags
That carried Doctors and their saddle-bags;
Gracious beasts! they stopped at every place
Where blinds were shut—know every patient's case—
Looked up and thought—the baby's in a fit—
That wont last long—he'll soon be through with it;
But shook their heads before the knockered door
Where some old lady told the story o'er
Whose endless stream of tribulation flows
For gastric griefs and peristaltic woes.

What jack o' lantern led him from his way,
And where it led him, it were hard to say;
Enough that wandering many a weary mile
Through paths the mountain sheep trod single file,
O'ercome by feelings such as patients know
Who dose too freely with "Elixir Pro.."
He tumbl—dismounted, slightly in a heap,
And lay, promiscuous, lapped in balmy sleep.

Night followed night, and day succeeded day,
But snoring still the slumbering Doctor lay.
Poor Dobbin, starving, thought upon his stall,
And straggled homeward, saddle-bags and all;
The village people hunted all around,
But Rip was missing—never could be found.
"Drownded" they guessed;—for more than half a year

The pouts and eels *did* taste uncommon queer;
Some said of apple-brandy—other some
Found a strong flavor of New England rum.

—Why can't a fellow hear the fine things said
About a fellow when a fellow's dead?
The best of doctors—so the press declared—
A public blessing while his life was spared,
True to his country, bounteous to the poor,
In all things temperate, sober, just and pure;
The best of husbands! echoed Mrs. Van,
And set her cap to catch another man.

—So ends this Canto—if it's *quantum suff.*,
We'll just stop here and say we've had enough,
And leave poor Rip to sleep for thirty years;
I grind the organ—if you lend your ears
To hear my second Canto, after that
We'll send around the monkey with the hat.

CANTO SECOND.

So thirty years had past—but not a word
In all that time of Rip was ever heard;
The world wagged on—it never does go back—
The widow Van was now the widow Mac—
France was an Empire—Andrew J, was dead,
And Abraham L. was reigning in his stead.
Four murderous years had passed in savage strife,
Yet still the rebel held his bloody knife.
—At last one morning—who forgets the day
When the black cloud of war dissolved away?
The joyous tidings spread o'er land and sea.
Rebellion done for! Grant has captured Lee!
Up every flagstaff sprang the Stars and Stripes—
Out rushed the Extras wild with mammoth types—
Down went the laborer's hod, the schoolboy's book—
"Hooraw! he cried—"the rebel army's took!"
Ah! what a time! the folks all mad with joy;
Each fond, pale mother thinking of her boy;
Old gray-haired fathers meeting—Have—you—heard?
And then a choke—and not another word;
Sisters all smiling—maidens, not less dear,
In trembling poise between a smile and tear;
Poor Bridget thinking how she'll stuff the plums
In that big cake for Johnny when he comes;
Cripples afoot—rheumatics on the jump,
Old girls so loving they could hug the pump,
Guns going bang! from every fort and ship—
They banged so loud at last they wakened Rip.

I spare the picture, how a man appears
Who's been asleep a score or two of years;
You all have seen it to perfection done
By Joe Van Wink—I mean Rip Jefferson.
Well, so it was—old Rip at last came back,
Claimed his old wife—the present widow Mac—
Had his old sign regilded, and began
To practise physic on the same old plan.

Some weeks went by—it was not long to wait—
And "please to call" grew frequent on the slate.
He had, in fact, an ancient, mildewed air,
A long grey beard, a plenteous lack of hair—
The musty look that always recommends
Your good old Doctor to his ailing friends.

—Talk of your science! after all is said
There's nothing like a bare and shiny head—
Age lends the graces that are sure to please,
Folks want their Doctors mouldy, like their cheese.

So Rip began to look at people's tongues
And thump their briskets (called it "sound their lungs,")
Brushed up his knowledge smartly as he could,
Read in old Cullen and in Doctor Good.
The town was healthy; for a month or two
He gave the sexton little work to do.

About the time when dogday heats begin,
Measles and mumps and mulligrubs set in;
With autumn evenings dysentery came.
And dusky typhoid lit his smouldering flame;
The blacksmith ailed—the carpenter was down,
And half the children sickened in the town.
The sexton's face grew shorter than before—
The sexton's wife a brand-new bonnet wore—
Things looked quite serious—Death had got a grip
On old and young, in spite of Doctor Rip.

And now the Squire was taken with a chill—
Wife gave "hot drops"—at-night an Indian pill;
Next morning, feverish—bedtime, getting worse,
Out of his head—began to rave and curse;
The Doctor sent for—double quick he came;
Ant. Tart. gran. duo, and repeat the same
If no et cetera. Third day—nothing new;
Percussed his thorax -set him cussing, too—
Lung-fever threatening—something of the sort—
Out with the lancet—let him blood—a quart—
Ten leeches next—then blister to his side;
Ten grains of calomel——just then he died.

The deacon next required the Doctor's care—
Took cold by sitting in a draught of air—
Pains in the back, but what the matter is
Not quite so clear—wife calls it "rheumatiz."
Rubs back with flannel—gives him something hot—
"Ah!" says the Deacon, "that goes *nigh* the spot."
Next day a *rigor*—run, my little man,
And say the Deacon sends for Doctor Van.'
The Doctor came—percussion as before,
Thumping and banging till his ribs were sore—
"Right side the flattest"—then more vigorous raps—
Fever—that's certain—pleurisy, perhaps.
A quart of blood will ease the pain, no doubt,
Ten leeches next will help to suck it out,
Then clap a blister on the painful part—
But first two grains of *Antimonium Tart.*
Last, with a dose of cleansing calomel
Unload the portal system——that sounds well!

But when the self-same remedies were tried,
As all the village knew, the Squire had died;
The neighbors hinted—"this will never do,
He's killed the Squire—he'll kill the Deacon too."

Now when a doctor's patients are perplexed,
A *consultation* comes in order next—
You know what that is? In a certain place
Meet certain doctors to discuss a case
And other matters, such as weather, crops.

Potatoes, pumpkins, lager beer and hops.
For what's the use—there's little to be said,
Nine times in ten your man's as good as dead—
At best a talk (the secret to disclose)
Where three men guess and *sometimes* one man knows.

The counsel summoned came without delay—
Young Doctor Green and shrewd old Doctor Gray—
They heard the story—"Bleed!" says Doctor Green.
"That's downright murder! cut his throat, you mean!
Leeches! the reptiles! Why, for pity's sake,
Not try an adder or a rattlesnake?
Blisters! Why bless you, they're against the law—
It's rank assault and battery if they draw!
Tartrate of Antimony! shade of Luke,
Stomachs turn pale at thought of such rebuke!
The portal system! What's the man about?
Unload your nonesense! Calomel's played out!
You've been asleep—you'd better sleep away
Till some one calls you"——
"Stop!" says Doctor Gray—
"The story is you slept for thirty years;
With brother Green, I own that it appears
You must have slumbered most amazing sound;
But sleep once more till thirty years come round,
You'll find the lancet in its honored place,
Leeches and blisters rescued from disgrace,
Your drugs redeemed from fashion's passing scorn,
And counted safe to give to babes unborn."

Poor sleepy Rip, M.M.S.S., M.D.,
A puzzled, serious, saddened man was he:
Home from the Deacon's house he plodded slow
And filled one bumper of "Elixir Pro."
"Good bye," he faltered, "Mrs. Van, My dear!
I'm going to sleep, but wake me once a year..
I don't like bleaching in the frost and dew,
I'll take the barn, if all the same to you.
Just once a year—remember! no mistake!
Cry 'Rip Van Winkle! time for you to wake!
Watch for the week in May when laylocks blow,
For then the Doctors meet, and I must go."

—Just once a year the Doctor's worthy dame
Goes to the barn and shouts her husband's name,
"Come, Rip Van Winkle!" (giving him a shake)
"Rip! Rip Van Winkle! time for you to wake!
Laylocks in blossom! 'tis the month of May—
The Doctors' meeting is this blessed day,
And come what will, you know I heard you swear
You'd never miss it, but be always there!'"

And so it is, as every year comes round
Old Rip Van Winkle here is always found.
You'll quickly know him by his mildewed air.
The hayseed sprinkled through his scanty hair,
The lichens growing on his rusty suit—
I've seen a toadstool sprouting on his boot—
—Who says I lie? Does any man presume—
Toadstool? No matter—call it a mushroom.
Where is his seat? He moves it every year;
But look, you'll find him—he is always here—
Perhaps you'll track him by a whiff you know—
A certain flavor of "Elixir Pro."

Now, then, I give you—as you seem to think
We can drink healths without a drop to drink—
Health to the mighty sleeper—long live he!
Our brother Rip, M.M.S.S., M.D.!—*Bost. Med. & Sur. Jour.*

ACIDUM PHOSPHORICUM DILUTUM. By JUDSON B. ANDREWS, M.D., Assistant Physician in the New York State Lunatic Asylum.—After discussing the supposed material relations of this acid to the nervous tissue, ("chemical food,") Dr. Andrews gives the usual sphygmographic drawings, illustrative of its effects upon the pulse. He then details several cases wherein its efficiency as a nerve tonic and stimulant seemed quite apparent, and concludes thus:

"Cases are sometimes under treatment at the Asylum, and more frequently in private practice, especially from among literary, professional or business men, which are characterized by loss of mental power from excessive brain activity.

"The patient is languid, unable to perform mental labor with the usual facility, is nervous, at times fearful, timid and agitated; the memory is weakened, and permanent impairment seriously threatened. Examination reveals no organic lesion, but the symptoms are such as justly occasion alarm. Such cases have been improperly called by some recent writers cases of cerebral paresis, a term too strong in its import, but expressive of the great danger which impends. For the recovery of these cases relaxation from business and labor, and the use of phosphoric acid combined with some suitable tonic, generally suffices.

"In cases where mental effort has been protracted till a sense of weariness renders its continuance difficult, a dose of the acid, from its stimulant effect, relieves fatigue and seems to invigorate the mental powers, and prepare the mind for renewed exertion. In the night sweats attending consumption, and other exhausting diseases, this acid is employed with benefit, and has some advantages over the aromatic sulphuric acid, so generally used. It is much more agreeable to taste, more likely to be tolerated, and does not constipate the bowels. The antiscorbutic power of this acid is well settled. A marked case of purpura occurred in the Asylum recently. The patient had been an inmate for several months, and though eating the ordinary diet of the house, in which vegetables are bountifully supplied, became scorbutic. The gums were red and spongy; there was lassitude, soreness of the muscles, and an eruption presenting the form of petechiæ and vibices upon the anterior of the chest and inner surface of the thighs.

"The patient was given the acid in half drachm doses, and in two weeks entirely recovered. In cases of anæmia and chlorosis, in both of which there is a depressed condition of the nervous system, phosphoric acid in combination with ferruginous tonics, has been found especially efficacious.

"At the Asylum, as an adjuvant for the solution of quinia in water, phosphoric acid is now substituted for the sulphuric acid, with the advantage of increasing the tonic properties of the solution. In giving quinia, we have, in cases marked by great nervous prostration, and accompanied with profuse perspiration, found this acid in half drachm doses a valuable addition, and one that seems to increase the power of the alkaloid. To the ordinary elixirs, tinctures and decoctions of bark, the acid forms an important aid, and by its acidity it overcomes to a great degree the unpleasant taste of the vegetable bitters.

"Observation here confirms the views of Nelligan and others, that this substance exerts no direct influence on the generative function. It has thus been employed on theoretic grounds; but any favorable influence it has exerted has probably been owing to its general tonic effect. We have used it extensively, and in cases where this function was abnormally excited; and in no instance has its administration been suspended from this cause, or has any inconvenience resulted from its use.

"Phosphorus in substance is now recommended by many of the Journals, in some forms of paralysis, in locomotor ataxy, and in other of the neuroses. It is an element difficult to dispense and dangerous to administer. In the stomach it is converted largely into phosphoric acid. It is from this change taking place in the stomach that the danger is to be apprehended. Is it not better to employ the acid which in proper doses is harmless, than to incur the risk of consequences in giving phosphorus in substance?

"In the administration of this remedy, one general principle should be kept in mind, viz.: not to exhibit it in cases of congestion of the brain, or in those in which there is an inflammatory action, either in the nerve substance or the meninges, as its stimulant effect might prove an aggravation to existing disease. In no case in which it has been given, has it disturbed digestion or proved an irritant to the stomach, even when its administration has been prolonged.

"When the remedy was first employed at the Asylum, the dose was ten drops three times a day; this has been gradually increased till now the standard dose is half a drachm. This is given in water alone, or with simple syrup, with which it makes a pleasant and agreeable lemonade. The large doses spoken of were thus taken. In the various combinations with other remedies, the dose varies from ten to twenty drops. A favorite tonic remedy, which makes an eligible preparation, and one very palatable, is as follows:

℞ Acidi Phosphorici Dil	℥ i.
Elix. Calisay	℥ iv.
Elix. Valer. Ammon	℥ ii.
Glycerinæ	℥ iii.
Sherry Wine	℥ vi.

Dose from one half to one ounce.

"It is from an experience in the use of this remedy in more than two hundred cases, extending over a period of several years, that confidence has been inspired in its general adaptation to the treatment of diseases marked by debility of the nervous system."—*Cincinnati Medical Repertory.*

POISONOUS HAIR DYES AND COSMETICS.—We have just received Prof. C. F. Chandler's Report on these and kindred nostrums, to the Board of Health of New York city. Of sixteen preparations for the hair which he analyzed, *fifteen contained lead* in the varying proportions shown in the following table:

Grains of Lead in one fluid Ounce.—1. Clark's Distilled Restorative for the Hair, 0.11; 2. Chevalier's Life for the Hair, 1,02; 3. Circassian Hair Rejuvenator, 2.71; 4. Ayer's Hair Vigor, 2.89; 5. Prof. Wood's Hair Restorative, 3.08; 6. Dr. J. J. O'Brien's Hair Restorer of America, 3.28; 7. Gray's Celebrated Hair Restorative, 3.39; 8. Phalon's Vitalia, 4.69; 9. Ring's Vegetable Ambrosia, 5.09; 10. Mrs. S. A. Allen's World's Hair Restorer, 5.57; 11. L. Knittel's Indian Hair Tonique, 6.29; 12. Hall's Vegetable Sicilian Hair Renewer, 7.13; 13. Dr. Tebbett's Physiological Hair Regenerator, 7.44; 14. Martha Washington Hair Restorative, 9.80; 15. Singer's Hair Restorative, 16.39.

For a fuller account of these delectable compounds, as well as of sundry lotions for the skin, "enamels," and kindred cosmetics, see Prof. Chandler's report, which is given in full in the American Supplement of the Chemical News for May, 1870, published by W. A. Townsend and Adams, New York.—*Boston Jour. Chem.*

[NOTE.—If these lotions were termed "bottled paralysis," as they have been sometimes termed, many would be properly warned and saved from the terrible suffering which their use induces.—E. S. G.]

TEST FOR CALOMEL.—Put a little of the suspected calomel on a clean knife-blade, moisten with alcohol, and rub with a cork. Pure calomel does not attack the steel, but corrosive sublimate, or calomel contaminated with the sublimate, produces black spots.

A NEW TEST FOR ALBUMEN.—Dr. C. Meymott Tidy, Joint-Lecturer on Chemistry at the London Hospital, has noted that a mixture of equal volumes of acetic and carbolic acids is a far more delicate test for the presence of albumen than any other method that has been proposed. In using this test with urine, it is necessary to shake the test-tube, as some opacity is produced by the mere admixture of fluid, which, however disappears on agitation.—*Brit. Med. Jour.*

COD-LIVER CREAM.—A correspondent of the London Pharmaceutical Journal gives the following directions for preparing this new article:

"A quarter of an ounce of elect gum tragacanth, steeped in sixteen ounces of cold water for twenty-four hours—during which time it should be stirred occasionally—yields a fine, gelatinous mucilage, which, when mixed in any proportion with cod-liver oil and simply shaken with it, permanently diffuses the oil into particles, which in vain struggle for reunion.

"It is usual to mix the mucilage and oil in equal parts, and it is further only required to sweeten and add, as a preservative and savorer, to each ounce of the mixture, one drachm of spirit of wine, to which has been added a drop of essence of lemon, the same quantity of essence of almonds, and a trifle of oil of cassia.

"Thus is the *mélange* completed, and of so agreeable a flavor is the result, that to most palates it would be found to acquit itself creditably in comparison with an average custard."

THE following account of the autopsy of the late Sir James Simpson, by Dr. John Chiene, published in the

British Medical Journal, will be of interest to all who revered (and who did not?) the great leader who is gone from our ranks:

"Sectio Cadaveris of the late Sir J. Y. Simpson, Bart. at 52, Queen street, Edinburgh, on Sunday, May 8th, 1870, at 2:30 P. M., forty-three hours after death. The *post mortem* examination was made by Dr. J. Bell Pettigew and myself, in the presence of Drs. Andrew Wood, Warburton Begbie and Moir; and Dr. Munro, Sir Jas. Simpson's assistant. The following facts were ascertained. The body was well nourished. Decomposition was commencing in the neck and upper part of the chest. The dura mater was adherent to the skull-cap. There was subarachnoid effusion. After reflecting the scalp, the following measurements of the skull were taken. Circumference round by occipital protuberance and below frontal eminences, 22½ inches; from ear to ear 13 inches; from occipital protuberance to point between superciliary ridges, 13 inches. The weight of the entire brain (cerebrum and cerebellum) was 54 ounces; the weight of the cerebellum, the pons and medulla oblongata, was 5¼ ounces. The convulutions of the cerebrum were remarkable for their number, depth, and intricate foldings. This was noticed more particularly in the anterior lobes and the islands of Reil. The brain-substance was congested, otherwise healthy. There were atheromatous deposits in the arteries at the base. The pericardium and anterior mediastinum were loaded with fat. The heart weighed 18½ ounces; it contained no clot; it was enlarged, flaccid and pale. Both ventricular cavities were enlarged. The muscular walls of the right ventricle in some places were almost entirely replaced by fat. The tricuspid and pulmonary valves were healthy. There was atheromatous deposit in the septal segment of the mitral valve. The aortic valve was competent; there was atheromatous deposit in one of the cusps and in the aorta, which was somewhat enlarged. In the ventricular septum, close to the apex, there was an aneurismal sac, of the size of a pigeon's egg, communicating by a large opening with the cavity of the left ventricle; it was filled with firm fibrinous coagulum, which projected into the ventricular cavity through the opening. The lungs, liver, kidneys and spleen were deeply congested, with indications in all of extravasation of blood (apoplexy)."—*Ex.*

MEDICAL NEWS.

" Nulla Dies, Sinè Linea."

A French Society has been organized, the members of which bequeath their bodies to the College dissecting rooms. Can we not have similar philanthropists in America?——The Appletons have just issued a volume on sclerosis of the brain, by Dr. Meredith Clymer, of N. York; a much needed work from a most acceptable source.——Theodore Clay, son of the distinguished Henry Clay, has been for forty years an inmate of the Lunatic Asylum at Lexington, Ky.; after this terrible suffering he has at last been relieved by death.——Photographs of skin diseases are now extensively made, and after being correctly colored are offered for sale to medical schools and practitioners.——The medical world is soon to have a new edition of Paget's pathology.——The North Carolina Medical Society recently had a successful meeting; Dr. Charles Hagan, president; Dr. Satchwell delivered the address of welcome; Dr. T. C. Murphy delivered the annual oration; Dr. Hugh Kelly, of Statesville was elected President and Dr. L. R. Payne, Orator.——Dr. Matthews Duncan will, it is said, be the successor of Sir James Y. Simpson, in the obstetrical chair in the University of Edinburgh.——Prof. Paul F. Eve has accepted the chair of Surgery in the Nashville University. The "call" was unanimous and does honor to those who made it, while the acceptance of the call does honor to one who is so willing to forgive and forget. Dr. Eve will bring great influence and support to the University, and while his friends in St. Louis regret his loss they are willing that he should go to the old home, where he is so welcome, and so appreciated by all true and honorable men.——Nèlaton is said to be failing from the effects of a painful cardiac disease.——Every journal and newspaper in this country has when alluding to the recent meeting of the American Medical Association, testified that it was a disgrace to the medical profession; California offers the Association a welcome at the next meeting, but evidently quakes, with apprehension at the prospect.——A recent French journal reports a case of twins, the mother being sixty years of age.——It is just reported that the action of the polariscope is so delicate and yet efficient, that with this instrument one millionth of a grain of quinine in solution can be easily detected; so testifies the distinguished chemist Herepath.——The British Medical Journal reports fifty-five cases of syphilis contracted by vaccination.——The first disection of the human subject occurred at Bologna; at that time there were at the University 300 professors and 4,000 students; there are now not more than 400 students there.——The best method of injecting the liver is that recently published by that excellent pathological anatomist, Dr. H. D. Schmidt, of New Orleans; Prussian blue for the duct; chrome yellow for the artery; vermillion for the portal vein, and white for the hepatic veins.——A Berlin dentist use as an anæsthetic a mixture of chloroform, nitrous oxide and atmospheric air.——The French say that syphilitic plagædena is one of the causes of hospital gangrene. ——The American Medical Association at its last meeting decided that five dollars should be the fee for the medical examination of those seeking insurance in life insurance companies.——It is said the National Medical Society (at Washington), which occasioned so much trouble in the association is defunct; "Those whom the Gods wish to destroy, they first make mad."———Newspapers frequently contain the following card from those of the medical profession who will be advertised, and yet fear the ethical laws duly made and provided to prevent them: "Dr. ——— no consultations on Sunday." Fraud or piety; how does the reader vote?

EDITORIAL.

"Nullius Addictus Jurare in Verba Magistri."—Hor.

American Association of Medical Editors.—This Association met in Washington, May 2d. After transacting miscellaneous business, the President, Dr. N. S. Davis, of Chicago, Ill., delivered the annual address. His subject was of course the Medical Press. He defended American Medical journals from the unjust slurs cast upon them by foreign and domestic cynics who (like cynics in all relations of life), are abusers of all that exists, while they are powerless to suggest changes for the better. The orator improved the opportunity of analysing the vices as well as the virtues of American Medical journals. He dwelt at length upon the acephalous character of some journals, and justly stated that, but for the title page, it would be impossible to say who edited them. He said, in speaking of such editors, "they have no positive views of medical polity, medical education, sanitary science, etc., with which to give their own editorial space a positiveness and individuality calculated either to attract attention or command respect." These headless anomalies were severely but justly dissected.

The president reviewed, with just severity, the means and devices adopted by editors to procure subscribers. He had nothing to say against the legitimate method of placing, directly or through the intervention of prominent physicians and friends, specimen journals in the hands of medical gentlemen; but against the many familiar and unworthy devices adopted, the speaker levelled the shafts of ridicule and condemnation. There are devices in this connection of which he had evidently heard nothing; else he could not have failed to hold up the culprits to the derision of the medical public. It is a source of regret that these unworthy schemes for obtaining patronage had not been known to the speaker, that he might have dealt with those stooping to such base work, as they deserve; and that patrons who are thus entrapped into subscription might be so placed upon their guard, as to be ready to repel all who so approach them. Dr. Davis might have warned the public against those who peddle their journals on the floors of Medical Associations and Societies, not quite as respectaby as the seller of peanuts peddles the contents of his basket; he might have chastised with the pen those who are so lost to all sense of decency and respectability, as to use the lecture-desk at medical colleges and the arena in clinical lecture halls to cry their claims and the claims of their journals, while they beseech those whom they are to examine for their final degree, to come conveniently to their support, in exchange for a prospective advantage, (mutually understood) at the period of graduation; he might have characterized with proper severity the system of advertising (as a means of ensuring patronage for a journal) extracts from private letters or the careless paragraphs and facile eulogies of the medical and secular press in behalf of medical periodicals needing, craving and peddling every modicum of encouragement, every miniature expression of praise. These devices are, for the credit of Journalism, not quite as familiar as those elsewhere mentioned, but they are not the less despicable and contemptible; they give respectability, and even an honorable position, by comparison, to the nostrum maker, whose august "likeness" and classic autograph are borne upon the labels of his wares, and whose distinguished name is always "conspicuously blown in the glass." It it is possible to make respectable the street vendors of popular nostrums, or the charlatans whose medicines are everywhere heralded by a venal and coöperative secular press, this is to be done by comparing them with medical editors who peddle their journals on the floor of societies and associations, or with teachers in medical schools, who disgrace themselves and degrade their institutions by crying their wares at the lecture desk or in the arena set apart for respectable clinical teachers. Such men do for the medical press what Falstaff did for the career of the soldier: they make gentlemen blush that they wear the same weapon (the pen), and that they have to struggle in the same field. The lash is the only corrective. This lash must be the outspoken sentiment of the respectable members of the profession, and the editorial caustic of those who would slough off or heal these offensive sores on the journalistic body.

It is said by some who are habitually prudent, and by others who are often politic, that independent criticism and outspoken condemnation must bankrupt the journal which attempts such a course; that enemies are more zealous to insidiously sting than friends are to generously defend. This may be so; but even if it be so, the editor of a journal must surely prefer to see his work perish with a respectable record, than to have it prosper at the expense of truth conveniently suppressed and eulogies profitably bestowed. The writer, however, does not believe that the publication of unquestioned truths, the exposure of disreputable pretenders, and the castigation of those who disgrace their profession injure any but those who are thus unmasked; that it alienates such men and those identified with them is true, but the loss of such men is great gain; their friendship should be as undesired as their enmity is impotent, and their malevolence disregarded. Those who honor the medical profession dishonor it, when they assume that the publication of the truth, however unpleasant, is censured and condemned. Truth, however harsh at times, should be the basis of all publications. Success with such a basis is doubly welcome. Success with any other basis is at best ignoble and meretricious.

These are but the natural reflections arising while reading the excellent address of Dr. Davis, and as further analysis for want of space is impracticable, the reader may expect to enjoy this address in the August Journal.

E. S. G.

MEDICAL TEACHERS' CONVENTION.—Since the last issue of this Journal, complete minutes of all that passed at this Convention have been received. After reading these there is no reason for changing or retracting anything that has been already said in regard to the legislation enacted. A few additional remarks will not, however, be inappropriate. Dr. Hammer deserves great praise for the motion which he introduced, and for the manner in which he advocated it. This motion was to the effect, that all medical Schools, guilty of pecuniary underbidding, should be repudiated. A most remarkable feature of this Convention was a speech delivered by one of the members; this was so disrespectful in tone to the President of the Convention and to the whole Body that it seems remarkable how the speaker escaped proper rebuke. The speech was somewhat in reply to that of Dr. Hammer, but embraced a wider range in the variety of the subjects discussed. It will be remembered that this Convention, at Cincinnati, in 1867, presented very extensively to the Profession the results of its deliberations; a part of these results was the adoption of resolutions in regard to the necessity of elementary classical education on the part of medical students, with some very just strictures upon the general neglect of classical education in the Profession and the lamentable results therefrom ensuing. The speaker at the Convention in Washington, characterized such enunciations as had been made, and as are frequently made, by all who have honestly the welfare and interests of the Profession at heart as mere sentiment; or to use the elegant phraseology adopted by him such enunciations were declared to be "*bosh*" and "*gush*." He said, that "my people" do not "gush about them any more." It is most evident that this remark used by the speaker from Louisville, is a gross libel upon the physicians of this State, and indeed of all the other States; there is not one physician of truth and earnestness of character, who does not offer most honestly and sincerely as the truth all that physicians are said by the speaker (Dr. D. W. Yandell) to regard as "gush and bosh." That the public will believe all that the speaker has ever said or written upon this subject to be (by his own admission in his speech) insincere or "gush and bosh" is unquestionable, but that the Profession of this city and State and of any other State are to be embraced in this catalogue, no journalist who has any pride in his brethren, will allow to be said without the most pointed and absolute, denial. The physicians of this section (styled, patronizingly, by Dr. Yandell, "my people") will never admit that what they and their friends have said or written about the improvement of medical education to be untruthful, or (to use the slang of this speech) "*gush and bosh;*" but the most lamentable reality.

The speaker charged that the acquirements of graduates were underrated; he said "we believe they know as much as we did when we began." No one in reply can justly challenge the individual consciousness or admission of any speaker, but his is certainly not the experience of others. There are occasionally those who are allowed to graduate after notorious failure, during their examinations, solely on account of the promises, representations or influences of guardians, parents or friends, but all do know, physicians who wrote and spoke as well at the period of graduation as they ever did afterwards. The auditory addressed, (facetiously styled in the speech "learned Thebans,") are almost all living refutations of the declaration that the graduates of to-day "know as much as we did when we began." Granting, however, the truth of the speaker's experience or admission, could there be a stronger argument in behalf of improvement?

The speaker next decried and scouted all that had been said about classical attainments. He appealed to the President and asked if he and the speaker, when they "selected the profession of medicine as our calling, could have engaged in its study," had a knowledge of the classics been necessary. It is lamentable that such reasoning was not properly noticed by those present. Such objections are mere sophistries. If all men were like Velpeau, or Dupuytren, or Drake, or Gross, or Hunter, etc., who achieved a great and deserved reputation, with educational resources greatly restricted, it only shows what great men can do, and not what ordinary minds would do. One may as well object to the development of improved agricultural machines because the Spaniards still plough successfully with the stump and reap with the hook; or object to constant study for the improvement of nautical architecture because Columbus discovered America in a "Spanish tub." Dr. Yandell's argument may be thus briefly stated:

If a stage coach has distanced a donkey cart, why should the world make such a noise about improving the locomotive?

The great argument of the speaker was, that after all, the people will select their medical attendant though "he may not know a Greek character or own a Latin grammar." The people select enthusiastically the sarsaparilla and buchu men, with a long list of charlatans (indeed, one may be in all respects a charlatan, and yet be selected by many of the people) but that this is an argument against a thorough medical education, no one ordinarily organized, can ever rationally suppose! It is the Profession who easily read and understand medical men and not the people. Physicians know that every hour spent in the library on their education, is of value incalculable. This is not to be denied by the argument that the selection of the people is an index of character or attainment.

This speech met with no reply. The Convention, like the Association, wished to evade the whole question of education, and this speech furnished a welcome pretext for so doing.

As long as those who occupy positions in medical colleges, strive by all their possible powers to depreciate thorough education and the best instruction, it is vain to expect that the people will ever do better or be able to distinguish the charlatan in medicine from the scientific physician. Such speeches are the guardians as well as the parents of personal ignorance and professional imbecility. They are prized inexpressibly by the indolent and the trifler, but to the pride, respectability and science of medicine, their offensiveness is inexpressible. E. S. G.

EDITORIAL BREVITIES.—The attention of the readers in Virginia is called to the letter from Abingdon, Va. The letter is from one whose zeal and earnestness very faithfully reflect the wishes and objects of the society which he represents. He has presented the matters involved in so forcible and acceptable a manner, that any additional appeal becomes unnecessary. The Lynchburg Medical Society (Va.) is also taking action in most respects similar to that of the Abingdon Society. Drs. Blackford, Edwards and Latham were appointed to superintend this movement, and as the enterprise is in efficient hands, the medical public may safely anticipate the best results.——The issues of this journal for February and May having become exhausted in supplying the increasing demands of the subscription list, the editor will be glad to pay 75 cents each for any of these numbers. Those who do not bind or preserve their Journals will really confer a favor by disposing of the numbers mentioned.———The literary public has in the past month been startled and saddened by the death of the Hon. W. Gilmore Sims, of South Carolina. An excellent sketch of this distinguished gentleman has been published by Dr. F. Peyre Porcher, of Charleston, S. C. ——This is the first number of the tenth volume of this Journal, and it is the best time for subscribers to induce their friends to subscribe.

CIVIALE.

THE RICHMOND AND LOUISVILLE
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ORIGINAL COMMUNICATIONS.

"Qui Docet Discit."

ART. I.—GENERAL REFLECTIONS UPON CLIMATOLOGICAL RELATIONS OF DISEASE. By WM. H. DOUGHTY, M.D., Professor of Materia Medica and Therapeutics in the Medical College of Georgia, at Augusta, Georgia.

Recent researches in climatology give promise of something advantageous to the science of medicine. In their sanitary bearings, they are determining with approximate certainty, what has been called by an eminent author,* not in the profession, "the mutual geography of disease and climate."

Meteorology and physical geography, representative forms of physical climate, in proper association with *vital statistics*, have facilitated the construction of a new chapter, at least, if not a new department, in medicine, known as "MEDICAL GEOGRAPHY." A sub-division of hygiology, it is designed to show the distribution of disease over the surface of the globe, and in the generalizations which have been thus far made, with apparent correctness, a decided advance is made toward scientific precision. Hereafter, instead of confining attention to the study of local hygiene, in its general bearings, we may, perhaps, have the great advantage of a *general atlas* of disease. With this assistance we shall know better how to apply "the ascertained facts in meteorology and climatology" in explanation of the distribution of diseases, thus giving valuable direction to a mass of observations which, in their innumerable character, have been left solely to the manipulation of a few minds out of the profession.

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*L. Blodget, page 454, climatology of the United States.

Hitherto meteorology, in its separate or individual relations to medicine, if we except a few diseases, has accomplished so little for the science, that it has, comparatively speaking, proved a fruitless physical study. In proof of this, we may ask how little that is essential has it contributed to our knowledge of the diseases excepted above, as, yellow fever, phthisis, cholera; those in connexion with which it has, perhaps, oftener and more thoroughly been considered? Of the essential meteorological conditions of the first, we know so little that it is impossible to predict with even probable certainty its appearance or progress in any given section where it is wont to prevail. In this locality, where the fear of its prevalence prompts the annually recurring question, "what do you think of the prospect for yellow fever this season?" the only candid answer is given, that we know nothing of the essential meteorological conditions preceding, producing or accompanying the disease, and therefore, cannot say whether it will prevail or not.

So also of phthisis—we give greater prominence, now-a-days, to its social relations, rather than those purely climatic, since statistics show a high mortality in hot and cold countries alike. And again, of cholera, who can define by meteorological means, its intrusive relations to all seasons and all countries, or account for its irregular visitations?

In its present associations, however, the medical geographer is enabled to group or arrange certain definite and, in a general sense, permanent climatological conditions with certain "classes or generic forms of disease," thereby establishing geographical zones of disease, or "*disease realms*," as they have been denominated.

We find the first separate allotment of this subject—medical geography—in a practical treatise upon medicine in Aitken's "Science and Practice of Medicine," (an English work of great value) from which it appears that in Europe, some of the great men, in and out of the profession, are contributing to its development as a branch of science. This work contains a *physical atlas*, representing, by different colors, the distribution of disease in geographical zones, the limits of which are determined chiefly by thermometrical measurements.

In this country, nothing has been done looking to so comprehensive classification of diseases by their climatological identity, further than the general suggestions contained in the great look upon the "climatolgy of the United States" by Mr. Blodget, published in 1857. The several authors within the ranks of the profession, as Forry, Drake, Barton, LaRoche and others of less distinction, who have discussed rather the climatological relations of certain specific diseases, already referred to (and with what result) have not attempted any such comprehensive arrangement of the subject. And yet, with a continental configuration favorable to the collection and comparison of obsevations, extending as it does from arctic to tropical regions, American climatologists favorably situated for its pursuit, may profitably engage in it.

The limits of the U. State alone, from north to south, are extensive enough to afford great facilities for the elucidation of the subject; as well as for the comparison of the data furnished by the several thermometrical zones that traverse it from East West, for the discussion of the respective of causes of disease in these several zones, as well as the blending of their types. Incalculable advantage has resulted to the science of agriculture, now in its infancy, from the energy of the Government directed through the several agencies, the Medical and Agricultural department and the Smithsonian Institute, in the collection and profitable presentation of meteorological and climatological facts. A simular advantage will ensue to medicine when with like industry, these accumulated observations are brought to bear upon this new subject. In this way the climatology of disease will receive a more candid, thorough and scientific discussion and elucidation than has ever before been attempted or made possible.

These groupings of climalogical conditions are, in effect, isothermic zones, being drawn not from geographical position (as of latitude and longitude) but having their boundaries determined by the measured temperature of the year and seasons. They are therefore intended to be general, and cannot indeed be absolute. And in reference to their thermal foundation Aitken properly observes, that, "as the physiological conditions ot plants and animals vary accoding to different degrees of latitude, or rather with the different lines of equal temperature and moisture North and South of the equator, so does the pathological character of diseases differ; and races of men are influenced as to health in proportion as they migrate from the land of their birth." (Page 1081).

In general terms these several zones are reprsented as follows, in this country—

The *polar*' extends from New York and Boston, via the Great Lakes and Northwest proper, to the Russian America possessions; the *temperate* embraces the Middle, Western and Pecific States; and the *tropical*, which for practical purposes is best subdivided into the Gulf (or tropical) and sub-tropical, comprises the remainder southward.*

The contiguity of these zones, each having its distinctive types of disease, favored also materially by the configuration of the Atlantic or eastern slope, necessarily permits the transfer of their respective influence from one to the other. A blending of the types of disease may thus ensue which our English author has not failed to notice in a forcible manner. He says: "While therefore, this temperate zone embraces, on the one hand, the extremes of temperature of the torrid and the frigid zones in the seasons of summer and winter, it is also observed to have representations of the types of disease which prevail in both these realms; and according as we approach its northern or its southern limits, we find that the characters of disease become so modified that their types are found so to mingle together on the confines of these disease-realms that the *continued* type of febrile diseases peculiar to the temperate zone tends, as we approach the tropics, to merge into and participate in those irregular and intermittent characters, which are peculiar to the type of the tropical malarious districts. It is only to a limited extent, however, that such modifications are found to occur; and there are some diseases which rarely tend to pass their geographical boundaries, unless specially favored by *tropical* identity of climate on the one hand, or *temperate* identity on the other. Under the former circumstances, yellow fever has been met with at Gibraltar, Cadiz, Lisbon, St. Nazaire, and even so far north as Plymouth Sound and Southampton water; and it has also extended in America beyond its usual limits; but so soon as the temperature falls below 55° Fahr. the importation of yellow fever into *this zone*, and its persistence in it becomes impossible." (Pages 1035-36.)

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*Note. Aitken defines them more particularly—

The *polar* zone or disease-realm taking the isothermal line of 41° Fahr. as its southern boundary, commences "on the western coast of North America above Sitka, extends southward across the district of the Canadian Lakes, sinking South and East into Canada and Newfoundland to Boston and New York or Philadelphia."

The *temperate* zone; The Southern boundary of the Northern realm corresponds to the Northern boundary of the tropical *disease-realm*, as already indicated by the isothermal line of 77°. In a Northern direction it extends to latitude 60° north, and includes the British Isles, Norway and Sweden; while in America its Northern limit includes part of Nova Scotia and Newfoundland. Its boundary to the North passes from 60° North latitude in a Southeastern direction on both continents, till it gradually declines towards the borders of Asiatic-Russia in tne old world, and to the district between Boston and Philadelphia on the Eastern shores of the new, and corresponds nearly with the annual isotherm of 41°.

The *tropical* zone; "The northern limet of the tropical zone unites the southen limits of the temperate zone and the lines of union of the two colors on the map (green and brown) indicate Humboldt's mean annual isothermal line of 77° Fahr. or 19° Reamur. It passes through Cuba and Florida in America; skirts the Cape de Verd Islands to Africa where, extending beyond the usual limits of the tropics, it passes the northern part of the great desert (Sahara) below Algiers, runs through Egypt, Northern Arabia, and Persia, into China, where it is lost in the Pacific Ocean, below the limits of the northern tropic. The limiting line of this zone ascends somewhat in summer, when the sun is north of the equator, and desends again in winter, when the sun is to the south of it." (page 1032.)

Taking yellow fever, epidemic dysentery, malarial fevers and hepatic affections,* as the diseases of the tropical realm, in the production of which heat, moisture and decomposing organic matter are concerned, that portion of the South in which we live, must present diseases proper to a semi-tropical climate and very different from those farther North.

We are, indeed, in a position favorable to an alternation or blending of the influences from the intenser malarial section or belt south of us, and those from the temperate and colder zones northward. Hence, in the summer, or warm season, while the malarial attacks, natural to the locality, may be numerous, yet they would nat equal in severity those characteristic of the more southern portion, now and then, from peculiar meteorological or climatological circumstances, not well understood, the prevalence of yellow fever, and comparing one year with another, *congestive* fevers in greater proportion than usual, might be expected. This is and has been our experience, vaguely referred to or explained by supposed differences in the topographical and meteorological influences.

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*It is said, that, "northward to 23° north latitude, 53 per cent. of all the deaths are attributable to these diseases. In latitude 35° north, where the greatest annual temperature is only 77° Fahr. and just where the tropical disease realm merges into that of the temperate realm of disease, these diseases cause about 14 per cent of the whole mortality." (Page 1034—Aitken.)

The two years, 1867-68, are well-known to physicians here, and almost throughout the south Atlantic section, within and without the strictly malarial belt, in the interior, high, pine-land and sandy region, as well as the lower, alluvial, river and coast line, as one remarkable for the unusual prevalence of severe malarial fevers, particularly the congestive type. Individual practitioners have been made to see in these two years more cases of this kind than would have been observed in the natural conditions of the climate in a decade. All other febrile influences seem to have been totally lost in this intensely malarial atmosphere. Typhoid fever was exceedingly rare, and even in the winter seasons, portions of which were very cold, malaria was at times actively operative. It is unaccountable, except by reference in general terms, to the *gulf* or *tropical* climate experienced along the whole coast. The normal westerly and southwesterly winds were substituted, during the warm season, by east and southeast winds, and not until the past summer (1869) have the former regained their sway—before these, the condition to which we have referred, have melted away, and for more than three months, (July, August and September), healthful conditions have been maintained in cityand country alike. In vulgar phrase, savoring somewhat of impiety, it is declared to be "*distressingly healthy*," very much to the advantage of an afflicted public whose sufferings from every cause since the war have been mysteriously aggravated by disease also.

In the cities, sanitary committees congratulate themselves upon the happy results of their labors to prevent disease. But, alas! they are mistaken, because it never was within the reach of local measures— useful as they are, they can never control the generation of malaria over the broad section—when by abundant moisture, with prolific vegetation and favorable winds from the tropical region, malaria, like a pall, spreads itself around and about, within and among us, then its dread presence in some form, will be disclosed by a state of general insalubrity. The drought that curtailed the cotton crop, maintaining high prices for this staple product, was a blessing (not in disguise, however),how that it also secured the health of the people. In the absence of moisture, malaria was not generated, therefore, a state of general salubrity.

The insalubrity of the years 1867-68 has been referred by intelligent persons to the imperfect drainage and interrupted sanitary measures usually in force upon plantations, resulting from the present indifferent system of labor and the carelessness of the population consequent upon their impoverishment. Doubtless these circumstances are entitled to consideration among the local or specific causes at work, but they are insufficient to account for the universality and almost uniform severity of the type of disease, even where no visible local conditions of this kind existed. High heat and great humidity, accompanied, doubtless, with the increased generation of malaria, which drifted where it was not generated, were the atmospheric conditions: altogether constituting one of those *tropical* waves of disease, charged with the overwhelming poison, and extending beyond the usual limits of its native zone, to work the deleterious consequences spoken ot. There was, moreover, something peculiar in it, exclusive of yellow fever influences, if we suppose the poison of yellow fever to be akin to malarial miasmata, for this disease, as is well known, did not prevail upon the Atlantic coast or the eastern portion of the Gulf, being confined to Texas and Louisiana. Our escape in 1867 was deemed remarkable, considering the apparent identity of the Gulf and local or Atlantic climates. Wiseacres shook their heads forebodingly and predicted its appearance *here* the next year.* This passed away intensely malarial but without the dread appearance of the vomito upon the south Atlantic coast, and very mildly upon limited portions of the Gulf coast. Thus clearly showihg that its cause and the conditions of its propagation, differing from simple malaria, are yet without the bounds of our knowledge of its climatological and meteorological peculiarities, and not being fortuitous, must still remain a perplexing study to medical geographers.

We are not yet able to explain why yellow fever should prevail here one year which differs apparently very little, if at all, from others when it did not. The theory of simple importation is defective, for the experience of later years still shows that a condition of reciptivity must preëxist at the time of its introduction before its epidemic prevalence can ensue, a condition, by the way, which promises to sanitary science a much larger control over the pestilential miasm, because it admits the possibility of maintaining an *unsusceptible* local condition. This occasional prevalence of the disease, at remote localities, must arise from some irregularly operating *tropical* influence, either produced by a temporary pervading identity, with the climie whence all such originate, or perhaps, demonstrated by a domiciliary suitability to it, so to speak. A closer study of the *home* conditions of generation, of the laws under which diseases propagate themselves or by which they are propagated, particularly the conditions proper to their subsequent epidemic existence, will ultimately throw light upon this subject.

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* Affording it time, as it were, to reach the Atlantic. It will be recollected that the terrible epidemic at New Orleans occurred in 1853, at Savannah, Charleston and Augusta, in 1854, and at Norfolk and Portsmouth in 1855.

Again: By considering briefly our relations to the other zones, we way also obtain a clue to the occasional intrusion for periods of greater or less length of the typhoid or continued forms of fever, epidemic influenzas, etc.

The date of the first appearance of typhoid fever in Georgia is very well fixed in the minds of our old practitioners. Its early visitation was as startling as the introduction of a new disease of like severity could be: it prevailed steadily from the mountains to the sea-board, from year to year, until it was apparently well demesticated, and then, without manifest cause, it has gradually disappeared, until within a few years or since the war, it is extremely rare in its genuine form. Does this not indicate the possible oscillation of "disease-waves" amplifying to their maxima in a certain indefinite period, and then receding whence they came? Sometimes, as it were, overleaping the bounds of their own geographical spheres to invade localities previously or naturally exempt from them?

We recollect, as if it was yesterday, when, in the Fall of 1847, in the midst of a dry, dusty term, which extended to the equinoctial period, under the penetrating influence of a cold northeast wind, that blew to the end of September, an epidemic influenza visited suddenly the city of Augusta, prostrating hundreds and even thousands in a short time. Whole families were taken in a few days, the direct attacks being sometimes complicated with *capillary bronckitis* (suffocative catarrh) the first cases of this dreadful disorder met with during our professional experience. It went, as it came, quickly, leaving silent hearthstones to monument the numerous vacant chairs left as the foot-prints of its fearful irruption. What could be more unnatural or essentially foreign to this climate at such a season and under the circumstances precedent. It was like some fierce Euroclydon in its disastrous descent upon the quiet stillness of an inland sea, scattering awe-stricken the merchant marine, either to strand or founder upon a surface lashed into fury by the angry invasion.[*]

We have had this season forcibly and unexpectedly brought to mind recently while reading with interest

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[*] The following record of the weather at Savannah, Augusta, and other points, for September 1857, is taken from the Meteorological Observations, (Vol. 1, 1854 to 1859), published by the Commissioner of Patents.

Winds.—At Augusta, with a total number of observations for the month of 78, the wind was entered as from the N. 18, N.E. 25. At Savannah, with a total of 90 observations, there were N. 13, N.E. 35—chiefly during the latter half of the month.

Rain in Inches.		
—At Savannah (for the month)	1.083	inches.
At Sparta, Geo.	0.060	"
Bt Augusta, (no record)		
At Aiken, S. C., near Augusta,	0.170	"

Relative Humidity.

100 being the unit, the mean at	7 a.m—	2 p.m.—	9 p.m.
was at Augusta,	81	54	54
" " Savannah	77	58	78

Temperature.

	Date.	Max. Temp.	Date.	Min. Temp.	Date.	Mean of the Warmest Day.	Date.	Mean of the Coldest Day.
Savannah	Sep. 20	92°	Sep. 30	57°	Sep. 15	82° 5'	Sep. 30	62° 17'
Aiken, S. C.	" 13, 14, 15, 16, 18 and 19	90°	" 30	53°	" 18 and 19	84°	" 30	59°

Augusta (no record).

This record shows that up to the equinox, with scarcely an inch of rain during the entire month, high temperatures with a low degree of relative humidity obtained. After this the northeast influences prevailed steadily and developed the influenza in the last week of the month. If the epidemic catarrh was solely the result of the change of temperature, and not due to a peculiar pervading influence accompanying it, then such phenomena ought to be common with us at this season. They are not—the changes are familiar but these results are very rare. The present season is very like that of which we are writing in point of temperature and dryness. A dry, dusty month, (Sept. 1859) with chilling northeast winds for the past few days (29th), making blankets comfortable at night and fires not unnecessary for children and feeble persons. September has been almost identical with that of 1857, and yet we have no catarrhal epidemic. Indeed it is worthy of remark that no such epidemic influenza has prevailed in Augusta since that of which we write. Catarrhs are common in the Winter and Spring, but severe influenzas, epidemic in character, are rare incidents of the climate.

Prof. Joseph Jones' "Observations upon Malarial Fever." Reciting the history of a case of remittent fever at the convalescent stage, the favorable report suddenly changes with the following record, "short, sharp and decisive."

September 28th. "Has a cough. The wind has been from the northeast for sometime, and the weather has been cold and damp, and epidemic catarrh is prevailing. About two-thirds of the hundred patients now in the hospital are suffering with the influenza."

"This patient was up and about the wards, assisting and nursing the patients all day. He was up and about when I went the rounds of the wards at 9 P.M. Shortly after this he complained of great oppression of the lungs, difficulty of breathing and loss of muscular power."

Sept. 29, 9 A.M. "During the night took a sudden and remarkable change for the worse."

Sept. 30. Died at 1 A.M. (Page 305, Transactions American Med. Association, vol. — 1859. Observations made at Savannah, Ga.)

If the study of medical geography is likely to throw any light upon such facts in our experience, may we not look forward hopefully to its development as a separate branch of the science? These waves of disease have been called by Dr. Lawson, who first applied this figure, "*pandemic* waves" in contradistinction to *epidemic;* the one signifying the general, all-pervading, wide-spread influence affecting progressively, and yet almost simultaneously large tracts of country and different communities—the other refering to the local epidemic prevalence of a disease. They are are quite different.

Cholera starting in the east will continue its westward progress until having apparently exhausted its violence, it ceases as suddenly as it commenced. Shall we attribute this progress in movement to the accidental circumstance of local contagion? Or its suspension to the destruction of like accidental conditions? So of yellow fever. Some years it visits many localities, widely separated—at others, it is confined to particular places. Is this accidental, fortuitous, wholly irregular? We think not. The wide spreading influence amounts to a general "constitution" equivalent to a "pandemic" wave of disease, regulated by the laws peculiar to that disease and its climatological relations.

If the basis of this geographical arrangement of diseases be correct, in a very general sense, their causes may be divided into two catogories, *climatic* and *social.* The number, character and gravity of those assignable to the latter, render it not a libel upon human civilization to call it the foster-mother of disease. However reproachful, it is nevertheless true, that a large majority of the diseases that afflict the race arise either directly or indirectly from those conditions (moral, mental and social) of society which the present civilization determines.

With a map of the geography of disease before us, if we mark the outlines of such as may be assigned to purely climatic influences (as in the tropical and polar zones), we observe that those portions of the globe, the most populous and highly civilized, which afford the highest type of eastern civilization, supply a list of characteristic affections wholly different and peculiar.

Thus in the torrid zone of disease, malaria with more than imperial sway, wears the sceptre; against it, there is scarcely the defence of even a gradual acclimatization. It is a purely climatic cause, generated by the relations of certain degrees of heat and moisture to decaying vegetation. Yellow fever, dysenteric and hepatic affections common to the realm are simply its allies or reduplicated similitudes.

If we turn to the opposite geographical extreme, marked by low instead of high temperatures, there also strictly climatic influences fix the limit to human life and activity.* But if we enter the intermediate region where nature renders the greatest subserviency to man in supplying his wants and responding to his labors; where mind exerts its greatest control over matter, and and where the personal, social and religious statue of the race is presumably displayed in its highest development, amid the mixed features of physical climate, we find nothing that gives indelible form and fixed character to the diseases there prevalent save the *artificial* conditions that man himself has set up. Disease here is not "to the manor born"—it is found not as the product of the climate itself but is attributed to the "condensation of people in towns, and the insalubrious and depressing conditions which necessarily arise from that cause." These considerations amplified so as to embrace everything, personal and relative, that involves the violation of the laws of health, furnish the fruitful source of constitutional disorders, vices of nutrition, non-malarial zymotic affections, continued forms of febrile disease, rheumatic and gouty affections, and similar morbid manifestations These complete the catalogue of diseases, filling likewise the measure of man's iniquity, being affixed as a penalty to civilization for its hygienic misdemeanors. Its payment, alas! bears to the grave fully one-half of the human race. Where similar conditions are established even in the climatic zones, like consequences ensue, subject, however, to the modifications induced by the potent climatic impressions themselves.

What a commentary upon human progress! By a poison of its own foul creation, the most desirable portions of the earth, in point of climate, are rendered equal in mortality to those most deadly by nature to the race. The man of science declaims against this suicide of nations and individuals in vain; the busy masses arraigned before the tribunal of health adjudicate their own cases by refusing obedience to its wholesome decrees, prefering still to throng the way whose course and end are disease and death. This is the field where sanitary science must ultimately show its highest usefulness and gain its greatest triumph. The correction of these social evils may be compared in morals, to the mastery of one's self—the most difficult, indeed, but the most brilliant of all triumphs. The problem to solve concerns not merely the correction of the present evil, but, rising to a higher duty, science must exercise the prerogative of showing to advancing civilization, how it may protect itself against the evil which it *generates of itself.* Against climatic influences it may teach the best methods possible of defence—making them harmless. perhaps, by proper modification or positive neutralization, but over those of social and internal origin, it should vouchsafe an absolute control—disarming, by preventing them in effect.

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* In Iceland, which has been designated the best known locality in this zone, it is said that "every year, in Spring or in early Summer, it is visited by *catarrh;* and at short intervals by *catarrhal fever*—a *true influenxu*, which has usually a great effect upon the mortality. The majority of Icelanders are said to die before the age of fifty, from *asthmatic* or *catarrhal* affections, which are also prevalent in Greenland and Labrador." (Page 1037, Aitken's Science and Prac. of Med.

Humanly speaking, health is the "pearl of great price," but the tyranny of our necessities has substituted another goal for our endeavors. It is unfortunately the rule of conduct of both nations and individuals to strive to become rich, great and prosperous before such attention is bestowed upon matters of hygeine as to ensure health. While it is not to be expected that sanitary science shall assume to dictate to commerce where cities shall be located or channels of trade opened, yet as it is her rightful province to indicate how under the selection of such sites and in the management of commercial operations the health and lives of the people may best be preserved.

And if the pursuits of men were guided, as far as may be, by the tuition of the branch of knowledge rather than by the rule of "*success at all hazards*," not only the physical but the moral and intellectual characters of mankind as a whole would be exalted.

We have but a single instance in the history of nations, and that is furnished by Holy Writ, illustrative of the attainment of a perfect physical development and healthful condition, and not the least circumstance surprising in its character, connected nected with it is the fact, that this nation lived, so to speak, without the hope of national greatness and wealth that stimulates other people. We allude to the Israelites—the Psalmist declares that at the time of their miraculous release from Egyptian bondage, "*there was not one feeble person among their tribes.*" This bespeaks a perfect state of hygiene, an internal economy, personal and social, domestic and national, highly reflective of the value of the application of the laws of health to human society. A simplicity of life plainly manifest during their historical connection with the land of the Pharaohs had secured the one most desirable object in life—health. As shepherds and minders of cattle, in the broad fields and under the canopy of the outspread heavens above them, they enjoyed the luxury of fresh air and free exercise, and were thus prepared to bear without injury the grievous burdens imposed by their oppressors. They grew and multiplied to the envy of the luxurious race, their masters, attaining a perfect physical state—a result only to be achieved by simple habits, a regulated discipline of life and proper physical labor.

This is a wholesome example to hold up before the world when we charge civilization with most of the calamities that befall men—neither modern nor ancient history can furnish a parallel to it. It is one worthy of recognition and emulation by organized society everywhere, the strength of its appeal resting in the sublime results.

Nowadays, the utmost that society earnestly attempts is the occasional effort to defend some city or community against pestilential invasion. Unmoved until its approach is imminent, herculean efforts are then made with success, perhaps, soon to cease, however, under the sense of security inspired by the dissipation of their fears. One of the most profitable lessons taught by the late unhappy war arises in this connection. It flowed from the occupation of New Orleans by the United States' forces in 1862. A military necessity prompted, yea, required the prevention of yellow fever, if possible, during the summers of 1862–'63–'64 and '65. The energies of the government were directed to the subversion of the causes and fostering conditions of the disease; it was accomplished by the employment of an "absolute and relentless military authority," as the reporter, Dr. E. Harris, of New York, styles it, against which no private or public interest could avail.

He says: "The relentless vigor and precision of a military government precluded the ordinary violations of quarantine regulations, while it gave peculiar certainty to the exercise of sanitary regulations in the city." The measures enforced by this milito-civic hygiene were perfect cleanliness, thorough drainage, domiciliary hygiene and strict quarantine regulations; and it was well said by Dr. Harris that "all the acts that related directly to the public health can be repeated in any city, and by any enlightened civil government." Let those who rest secure in the dogma of its exclusive importation remember that while, by the interposition of military authority, its importation and epidemic prevalence were prevented, its *generation* in and opposite to the city was not. In the summer of 1863 it made its appearance in the gunboats anchored opposite the city—it was communicated to a few stevedores upon the wharves, but failed to spread even after its generation. We repeat that the lesson taught by this exercise or display of control over these conditions of its wide-spread propagation possesses peculiar force—thus forearmed, communities may hereafter, with holy zeal, mock the fury of the "pestilence that walketh in darkness and wasteth at noonday," and contribute to no small degree to the purity of the fountains of life and health in their ordinary course. Almost desolate of hope, the promoters of sanitary science, like the Daughters of Zion, are ready to "hang their harps upon the willow," when mocked by the indifference ot civil authorities to the true interests of the public health. Even the plea of self-preservation is without force until the ghost of death haunts them with his immediate presence.

ART. II.—A CASE OF OCCLUSION OF THE VAGINA, WITH PROTRACTED RETENTION OF THE CATAMENIA. BY J. B. MALLORY, M.D., Memphis, Tenn.

In the routine of medical practice, cases are occasionally met with by the physician, that possesses, on account of their peculiar nature, a more than ordinary interest. The subject of the following report is believed to be of this character. In the language of an eminent American Surgeon, cases of occlusion of the vagina are rare, and the opinions in regard to the practicability and modes of relief, conflicting. An abstract of five hundred and eighty-three post-mortem examinations of the uterine organs, made at St. George's Hospital, London, from 1841 to 1850, illustrating the pathology of the uterus, vagina, etc., records only one case, and this terminated fatally soon after the evacuation of the contained fluid.

In a report made by Dr. J. Mason Warren, of Boston, to the American Journal of Medical Sciences, for July 1851, he remarks that such cases successfully relieved by an operation are rare. Boyer, he adds, in corroboration, details two or three very interesting cases, showing the anatomical peculiarities, which are likely to exist; but advises against the operation in nearly these words: "An opening into the bladder and rectum is not the only accident to be dreaded. Inflammation of the womb and of the neighboring parts has, to my certain knowledge, caused the death of two females, on whom it had been performed." Other authorities of celebrity, likewise testify to the formidable nature of an operation. Three interesting cases, however, are given by Dr. Warren in his report, each of which he successfully relieved and demonstrated that the operation is not, at least, necessarily fatal.

In view of these facts, much interest was felt in the case of the individual, whose history and treatment I now propose to report.

Sarah Walker, aged thirty-four years, a married woman and mother of five children, was confined with her last child in the spring of 1864. This child she nursed twelve months, and weaned it. The three succeeding months, her menstrual discharge was regular. It then ceased for five months. About this time excessive pains and hæmorrhage ensued. A physician was called in, and shortly after his visit, a substance passed, the size and form of an egg, from the vagina of a fleshy or fibrous character. The pain then ceased, but occasional paroxysms continued to recur, with some fever for five or six months, during which time her periods never returned. In July, 1866, being twelve months after their cessation, severe pains, greatly aggravated in degree, during the time of her monthly period, were experienced, which at length became insupportable without the free use of anodynes. In March, 1867, she was first seen by me; an examination, per vaginam, revealed at once the true condition of the parts, hitherto unsuspected. An obstruction completely occluding the vaginal canal, prevented the introduction of the speculum, the thickness of which could not be determined, but sufficient, as was evident, to prevent the catamenial flow as well as the passage of the instrument. An adhesion of the walls of the vagina had taken place, after the discharge of the egg-shaped fleshy substance, above spoken of, doubtless the products of a false conception. An examination made with the finger, per rectum, revealed the existence of a tumor, large and resisting, which from its size and because of the non-appearance of her monthly periods, was rightly conjectured to be an accumulated secretion of the uterus. In consultation with Drs. Allen and Fenner, of this city, who visited the patient with me, it was deemed advisable to make an opening through the septum into the tumor, as the safest method of furnishing an escape for its contents. A small opening was accordingly made by Dr. Fenner, with a small bladed bistoury, through which a black tarry looking fluid immediately flowed. In making this opening it was ascertained that the thickness of the septum exceeded an inch or more. An effort was made to enlarge the incision, but the patient strenuously objecting, the attempt was postponed. Occasionally, for two weeks, she was visited by me, during which time the discharge continued and her health greatly improved.

About three months after the operation, some pain in the left iliac region was complained of and shortly an enlargement gave evidence, that the ovary on that side was diseased. Fomentations, iodine, etc., were directed to be employed. In a few days, an opening appeared which gave exit to a considerable quantity of pus. The opposite side soon became similarly affected, and from both a constant discharge escaped for several weeks. At the expiration of this time her health having been greatly improved and her strength considerably recovered, she was enabled to perform, without inconvenience her usual ordinary domestic duties.

In January, 1869, my patient again called on me; her menstrual functions not having been performed for the three preceding periods. She complained much of the pains, which she stated had returned and caused her great suffering. As was conjectured, the opening, artificially made, was found on examination to have closed, the cicatrix being scarcely perceptible. No tumor being felt, however, it was deemed advisable to defer another operation until the uterine secretion might accumulate sufficiently to give direction to the knife. At the expiration of two months, the parts were again examined by me, assisted by Dr. W. E. Rodgers, of this city. The tumor was felt, as before, but less firm. The patient was now quite willing to submit to treatment. She was, therefore, put under the influence of an anæsthetic, and the speculum introduced. The parts presented no change since last examined; keeping the left forefinger against the tumor, per rectum, a trocar was plunged through the middle of the septum to the depth of one and a half inches, a canula inserted, but owing to the thick consistence of the black discharge, it was withdrawn, and by means of a probe-pointed bistoury, the wound laterally enlarged. For two days the fluid continued to pass away, and much encouragement was felt for the patient's early recovery.

On the third day, however, after the operation, her husband desired me to see her immediately, as he feared she was dying. On my arrival, she was suffering greatly from pelvic pains. Her pulse was small, rapid and without force. Rigors had supervened, and the prospect of a favorable termination of the case was not encouraging. Fomentations, anodynes, etc., were ordered and perfect quietude injoined. The following morning a favorable change was found to have taken place. The pains had ceased, the pulse became more natural, and a purulent discharge, having an exceedingly offensive odor, was issuing through the aperture. It was evident an abscess was again formed and opening internally, had found an exit in this direction. The quantity of pus thus passed exceeded a pint. For eight or ten days she was confined to her bed. After which her improvement was rapid.

To prevent contraction and closure of the passage, a silver female catheter was inserted and kept in position about a week, and subsequently, for several weeks, it was occasionally introduced.

In consequence of the reappearance of the purulent discharge and intense paine supervening in the iliac region, with a feeling of general malaise, she was recommended to use cod-liver oil, and a nutritious, diet, alternating with the iodide of potassium, in the usual alterative fluid extracts. More than eight months have now elapsed since the last operation was performed. Her menstrual function is regular and natural and her health seems perfectly restored.

In the treatment of this case, it has been an object with me to ascertain how small an opening would suffice to remedy the unfortunate accident, believing that the danger to be apprehended in operating, would be in proportion to the extent to which the obstruction was divided. If the impediment, to be overcome, had consisted of a plug of inodular tissue, filling up the vagina, free incisions might have been made with impunity, limited only by the anatomical boundaries; but as it was the walls of the vagina that had adhered, and the bladder and rectum lying in juxta-position, the wounding of important parts was to be apprehended, as well as the inflammation which would necessarily result from the division of the septum and the sudden introduction of air to the uterine passages.

It is worthy of remark, that each operation was followed by a protracted purulent discharge, which was attributed to a preëxisting diseased condition of the ovaries, consequent upon a prolonged retention of the catamenia.

ART. III.—CARBOLIC ACID. By C. WESLEY THOMAS, M D., Albemarle County, Virginia.

Of the use of carbolic acid as a therapeutical agent, much has been said and written, since its recent introduction to the notice of the medical profession, and, perhaps, "the half has not been told us." In my opinion there is no article in the materia medica more deserving its place as a valuable therapeutic agent—and none perhaps which can meet so many indications. I think no physician's medical chest complete without it. In ulceration of mucous membranes, especially when accompanied with purulent discharge, I have found no agent equal to carbolic acid, to correct fœtor, stimulate the ulcerated surface, promote normal granulation and restore healthy action. In diphtheria, chronic bronchitis, tonsillitis, ozœna, and indeed all diseases of nasal and air passages, I have never yet failed to derive great benefit from its use. In one case of phthisis pulmonalis—in an advanced stage, its inhalation afforded great relief; lessening the irritability of the mucous surfaces and facilitating expectoration. In this case I met with none of those disagreeable symptoms which have been observed in its employment in the form of spray, viz: faintness and great depression, Dr. H. W. Fuller (Brit. Med. Jour., Feb. 20, 1869), states that he supposes these symptoms to arise from the abnegation of atmospheric air which attends inhalation by Siegle's apparatus. I use the steam atomizer of Messrs. Codman & Shurtleff, and its inhalation produced not the slightest discomfort, but always relief to the patient. In January last I was called to see a patient, a man aged 35, whose throat was the seat of a phagædenic ulceration—the result of secondary syphilis. The ulceration had been running on for three months unchecked, resisting all attempts to stay its progress. Nitric acid, nitrate of silver and other escharotics had been used *ad libitum*, but with no success. He was very much reduced and hectic fever was on the point of supervening. The whole of the pharynx and posterior nares was the seat of the ulceration; the soft palate was almost entirely gone, and the whole of the throat and fauces were covered with foul, greyish sloughf, and was rapidly spreading. I commenced with a solution of carbolic acid, two grains to an ounce of water—increasing it to four the second day—used as a gargle three or four times a day. By the fourth day there was evidence of ulcerative action having been arrested and healthy action set up; and at the end of one week all the foul, greyish sloughs had separated, disclosing a beautiful, healthy granulating surface beneath. In one month the patient was discharged cured, with only a loss of a portion of the soft palate, interfering with his swallowing liquids and injuring his voice. I would add here that I gave internally, iod. potass. with fl. ext. Stillingia.

In wounds of all kinds I have found no application to meet the indications so well as a sol. carbolic acid. In recent incised wounds, I have used a plaster after Mr. Lister's method, and also Dr. Richardson's styptic colloid with carbolic acid, and in every case immediate union by the first intention was the result. I have had recently under my care a case of severe contused and lacerated wound of the foot. A tree had fallen upon the foot of the patient, tearing away all the soft parts on the inner side; denuding the bones, and laying the tissues in a flap back upon the plantar surface across the ancle-joint there was an incision of two inches, laying open the joint. This wound was treated with sol. carbolic acid ℥i to Oj. Cloths saturated with the solution were kept constantly applied, and absolute rest in the recumbent position enjoined. Very slight inflammation followed, especially at the joint; there was very slight sloughing of the tissues with but little suppuration and the patient was able to go about at the end of the sixth week with only a loss of motion in the joint.

I have thus briefly recited my experience with carbolic acid, and added my mite of testimony in its favor, to the volumes already given, and I think it requires not the vision of a prophet to predict that this remedial agent will ere long be regarded as one of the most valuable that can be found throughout the entire list of the pharmacopœia.

ECLECTIC DEPARTMENT.

"Carpere et Colligere."

ART. I.—CASEOUS BRONCHO-PNEUMONIA, (PULMONARY CONSUMPTION). A Lecture delivered before the Magdeburg Medical Society, December 9, 1869, by Dr. E. AUFRECHT. (Berlin Klin. Wochenschr., 10, 11, 12, 1870. Reviewed by Dr. BETTELHEIM, in the Med. Chir. Rundschau, Vienna, April, 1870, and Translated for the Richmond and Louisville Medical Journal, by Dr. EPSTEIN, of Cincinnati, Ohio).

By "tubercle" was meant, from olden times, no more than a little nodule. The word itself (Virchow) has no genetic sense whatever, but only a descriptive one; so we speak now in osteology of a tuberculum majus and minus. Bayle overlooked this, and understood by "tubercle" a pathological product of a well defined appearance and consistency, originating from a constutional diathesis; a tumefaction formed by a more or less solid mass, or an already softened one, enclosed by walls, which were connected with the tissues of the organ—an encysted tubercle. The same investigator, although he recognized the anatomical differences between "tubercle" and "tubercular" degeneration, still called those masses also "tuberculous," which occur in the lungs and lymphatic glands alongside with tubercles, but which, though resembling tubercles in form, differ from them widely in quality, and, although tubercles are by no means the cause of the so-called "tubercular degeneration" of the lungs. After Bayle came (1826), Læennec, who maintained that tubercles were *always* the basis of pulmonary phthisis; that tubercular degeneration was nothing else than the consequence of a confluence ot tubercles. His opinion was so generally accepted, that whenever a tuberculous infiltration was met with, it was even neglected to be examined as to whether it really proceeded from tubercles. The reason that Læennec found tubercles almost always was that he regarded as tubercles those foci of inflammation which fill up individual alveoli, or groups of them, and present the appearance of nodules. This view was essentially supported afterwards by Rokitanski's (1846) doctrine of dyscrasiæ. Tubercles and turberculous infiltration were assumed altogether as the consequence of one and the same dyscrasia, the common cause of both, while their differences seem to have been totally disregarded. It was Virchow who (1850) taught first that the tuberculoid metamorphosis was not the property of a peculiar constitution (1847); that in cancer, too, there occurs a tubercle-like metamorphosis (1851); that there is an inflammatory, a cancerous, a typhous, a farcic (glanderous), and a sarcomatous tuberculization. He proposed (1852) the word "caseous," instead of "tuberculous" metamorphosis, to which the originally cellular (1852) tubercle is as much obnoxious as are the products of inflammation generally. Hence, meeting with a caseous infiltration, it was not necessary to assume at once its origination from tubercles, for it may have been also a caseous metamorphosis of some inflammatory product. Nay, even in cases where individual foci, in the form of nodules, are found in the lungs, it is not necessary to assume the presence of tubercles, for the case might be also that of miliary, caseous hepatization, which is distinguished by early solidification and necrobiosis. Heidinger, Niemeyer, and others, aided essentially in the elaboration of these ideas.

A great part of the profession, however, will have nothing to do with such a strict distinction between tubercles and caseous inflammation, and is generally reluctant in giving up the convenient and comprehensible dogmas of Læennec. Aufrecht now attempts to enter deeply into the reasons of this reluctance on the part of the practical physicians, and thinks to find the reasons in the following:

In the first place, we think of tuberculosis, according to Læennec, as of an altogether peculiar disease, one that is based upon an hereditary diathesis, and partly upon a scrofulous as well as upon some indeterminable cause. But, separating tuberculosis into caseous inflammation and real (miliary) tubercles, there is wanting (see below) an anatomical basis for all that which Læennec taught about the etiology of tuberculosis and tuberculous infiltration.

Secondly. It is said "That all that which was designated since Læennec as infiltration tubercles of the lungs, is the product of chronic, and especially catarrhal pneumonia;" and again: "In very many cases there is not a single tubercle to be found in phthisical lungs" (Niemeyer); and again: "The caseous pneumonic foci are more frequently to be met than real tubercles, and the first beginnings of pulmonary phthisis especially belong mostly to these forms" (Waldenburg, 1869). Now, the practical physician can neither give full inportance to the above ideas, nor can he divest himself of his received views, so long as he is unable to examine clinically in every instance, especially in the beginning of the ailment, whether he has before him a caseous inflammation or tubercles. (Never? Rev.)

Aufrecht failed in his attempt of finding differential signs of determination as to which of the two diseases one has to deal with in a given case, and the reason of his failure is that he does not admit at all of phthisis beginning with tubercles in the apices of the lungs. (See below.)

The following remarks of the author, in the sense just indicated, are based upon the observations which he made of pulmonary diseases in the Magdeburg Hospital. First of all he examined eight or ten cases, in which the lungs were intact up to their apices, and in every one of which there was lodged a yellow caseous focus, and he found that the foci originated from a filling up of the finest bronchial termini and alveoli, with a partially detritous cellular material. *There was not a tubercle to be found anywhere; there were always inflammations only in the form of broncho-pneumonic foci.* These, however, were peculiarly characterized by the persistency of the deposited masses, their consistency and appearance, as well as by the disolution of pulmonary tissue connected with *their (the masses) presence, and which in several of these cases had already commenced.** The same state was found in the other (forty-eight) cases, (sixty-four in all), in which were lesions of the pulmonary substance of a high degree, and in which, too, the bronchial termini and alveoli were filled, either with cellular or detritous material, but no tubercles could be discovered. Nor could the author regard the cavernous excavations, which some of these cases presented, as resulting from a deliquescence of tubercles; for, on the one hand, he could discover no trace of tubercular nodules in the walls of the caverns, while, on the other, he not only found the bronchial walls studdied over with yellow caseous masses, but could also trace these far into the surrounding tissues. For this form of pulmonary affection, the author proposes the name of "Caseous Broncho-Pneumonia," and believes the expression of "Chronic Catarrhal Pneumonia," which Niemeyer uses, to be appropriate for another form, one, namely, in which the bronchial termini and alveoli are filled with a cellular exudation, "in persistent indolent rest." In the larynx, also, that which used to be referred to tuberculosis, is only the result of an ulceration proceeding from the cellular element of the mucous glands. The same is the case with the intestines also.

In reference to the coexistence of caseous inflammation and tubercles, it is to be noticed that Buhl (1858) explained the foci of caseous inflammation as being foci of infection, from which general tuberculosis proceeds, a view which has been supported since that time by Niemeyer, Villemin (1856), Lebert and Wyss, Waldenburg (1867), Fox (1868) Cohnheim and Frænkel. Experiments upon animals taught us, in fact, that caseous inflámmation, produced by very different agencies, is followed by miliary tubercles—very likely through the agency of the lymphatics. Aufrecht at least found (1869) that the miliary tubercles of the peritoneum appeared as accumulations of cells around the inflamed lymphatics. The author furthermore observed in persons who died from general miliary tubercles, in the Magdeburg Hospital, that only such changes could be found out in them when they were *first received* there, as corresponded with the caseous broncho-pneumonia, and that only in the *course of days and weeks* was there associated with this the signs of general tuberculosis. Based upon these observations, the author does not hesitate to put forth the following sentences: The disease which takes its starting point from the apices, or upper lobes of the lungs, and remains stationary there for a longer or shorter time, and which forms the basis of phthisis, does never begin with the formation of tubercles, but always in the form of broncho-pneumonic foci. In this form the affection may run its entire course from beginning to end, and it is only in a minority of cases that a caseous broncho-pneumonia becomes complicated with tuberculosis.

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* There is here a want of clearness in the original, which I neither aggravated nor obviated by the English rendering.—Translator.

It would, therefore, be impossibte to diagnosticate a consumption which began with the formation of tubercles, because there is no such thing. (More correctly it would be to say, because with the present more exact distinction in examining no undoubtful case of the kind was yet met with. Rev.) Niemeyer gives, indeed, certain signs by which primary tubercular consumption might be recognized: 1. Absence of prodromic catarrhs. 2. Quick emaciation from the very commencement, together with a high bodily temperature. 3. Cough and expectoration not occuring until some weeks *after* the emaciation had lasted for some weeks. 4. Unusual shortness of breath, while the physical examination gives only a negative result, and shows only afterwards signs of solidification and catarrh. 5. Huskiness of the voice early in the course of the disease, frequently also in connection with signs of laryngeal phthisis. 6. Usually connected with these, signs of intestinal tuberculosis. 7. The sickness lasts usually less than a few months. Still Aufrecht observed a case which, though it seemed to have corresponded exactly with the above sketch of primary tuberculosis, presented no tubercles on its autopsy, but only caseous broncho-pneumonia. (However, this was only *one* case, and further observations, directed expressly with reference to this sketch of Niemeyer, are yet necessary to show us whether we are to abandon it or not. Rev.) The question as to an hereditary disposition, which was always accepted in tuberculosis, when referred to that of broncho-pneumonia, is answered by Aufrecht from his data of 100 cases, that it was traced 20 times in 88 cases, a proportion corresponding with that stated by authors on the subject (who, however, refer to tuberculosis). Aufrecht, therefore, accepts unhesitatingly Niemeyer's view of the frequent occurrence of an hereditary disposition to caseous broncho-pneumonia.

Aufrecht finds, however, "not the least reason for the assumption of an hereditary disposition to tubercles." But, though children do not inherit a disposition to tuberculosis from their parents (who may suffer from caseous broncho-pneumonia, syphilis and scrofula), still that disposition may be congenital. In this way the author would account for tubercular arachnitis in cases where no caseous foci can be discovered. For it is not every case of tuberculosis that can be traced back to a caseous focus in the organism, not even if we consider the circumstance, that a caseous focus may, indeed, have been healed already, by the time that tuberculosis followed it as a consequence. (Waldenburg, 1867, Hoffman.) But we know of another disease (Ruge, 1869), beside caseous foci, viz., chronic irritation (however, in Guinea pigs only, Rev.), which may give an impulse to tuberculosis. Ruge succeeded in producing tuberculosis in the Guinea pig by the introduction of cork or sponge in the abdominal cavity, hence without the agency of caseous material. (This alone is, however, not sufficient for the assumption that a similar result may take place in the human body. Rev.) The author mentions, however, some (3) cases where tuberculosis made its appearance in conjunction with, or soon after a full development of interstitial nephritis and hepatitis, and where a caseous focus could not be demonstrated in every instance. The author, therefore, cannot doubt the occurrence of miliary tubercles in children, even without the presence of a caseous focus. (But in such cases we must assume the existence of a chronic inflammation, and it would certainly be difficult to exclude one with certainty from the organs which were attacked with tubercles. Rev.) In contradiction to Niemeyer, who assumes that *every* pneumonia may terminate in a caseous infiltration, Aufrecht assumes that *peculiarly constituted inflammations* are the bases of most broncho-pneumonias, which, in consequence of those peculiarly constituted factors participating in the inflammation, terminate in inflammation. The author concludes this interesting part of his discourse by saying: "When of a certain number of stone-cutters one part dies of caseous broncho-pneumonia, another exclusively of chronic interstitial pneumonia, and a third does not suffer at all, the causal opportunities being, on the whole, the same for all, we must not then seek for the cause of this in the predisposition of the individuals to explain why, in consequence of the irritation operating upon their lungs, in one case cells make their appearance and crumble down, in another the new cells give up part of their bodies to the new formation of connective tissue, and in the third case the pulmonary mucous membrane is strong enough to resist the same irritative influence."

Aufrecht puts, therefore, caseous broncho-pneumonia, clinically and anatomically, in the place of Læennec's tuberculosis.

The author discusses, lastly, the here pertinent and interesting question of the day, viz., the connection of pulmonary hæmorrhage with consumption.

Niemeyer contradicts the old opinion of Læennec, that hæmoptysis is a sign of an already existing disease of the lungs, tubercles, and maintains, on the contrary, that the blood which is left back in the alveoli of the lungs, after an hæmoptoic attack, produces pneumonia and caseous infiltration. He supports this his view by the fact that most cases of hæmoptysis are followed by phenomena of irritation in the lungs and pleura, and by febrile movements. He also adduces one case where he discovered the detritus of a bloody coagulum in one bronchus after a hæmoptoic attack. (Traube's objections, as well as Niemeyer's reply to it, may be seen in the January number of the "Rundschaw," 1870, No. 4, p. 13.

Aufrecht takes sides in this question against Niemeyer.

He thinks that in cases of pulmonary phthisis, after traumatic hæmorrhage from the lungs, it is not necessary to assume with Niemeyer that the bloody residuum in the lungs was the cause of it, after days and years, since it is more plausible (? Rev.) to assume that the injury caused a tearing of the lungs, followed by an inflammation, and at last by a crumbling down, caseous exudation. The author is, furthermore, opposed to the idea of a coincidence between epistaxis in youth and subsequent phthisis, and should even such a coincidence be established, he would not interpret both hæmorrhages in the same way. (His assumed resemblance between the gastric hæmorrhage of an ulcus rotundum and hæmoptysis is not exact, for a gastric ulcer is not in the habit of manifesting itself by hæmorrhage without gastric symptoms preceding it. Rev.) He calls attention to the great ease with which the vessels of the schneiderian membrane bleed generally, in contradiction to the relatively rare bleeding from the vessels of the laryngeal and tracheal mucous membranes. That no disease could be demonstrated anterior to an hæmoptoie attack, and that fever and inflammatory symptoms succeed it, does not speak against the idea of a caseous focus being the cause of hæmoptysis, for we find in autopsies even cavernous excavations, whose existence no symptoms revealed during life. Aufrecht would rather regard hæmoptysis and its subsequent fever as the result of the solution of continuity of a certain part of the lungs, which after becoming inflamed is then beginning to crumble down. The fever, which succeeds on the second or third day after hæmoptysis, he regards as a traumatic one, consequent upon the pulmonary wound. If there be no fever, then the case is similar to an insignificant injury of the skin, which may also happen without any subsequent traumatic fever. (It is certain that this is not, after all, the last word about the connection of phthisis with hæmoptysis, nor about the doctrine of tuberculosis generally, still every discussion of this opportune question is of great importance for the practical physician. Rev.)

NOTE.—As these several views are attracting universal attention they are herein published. If the darkest hour is that before day, we must very soon, from present appearances, have at least a little light.—E. S. G.

ART. II.—HISTORICAL LETTER ON THE INTRODUCTION OF ANÆSTHETICS IN DENTISTRY AND SURGERY IN AMERICA, AND ON THEIR FIRST EMPLOYMENT IN MIDWIFERY IN GREAT BRITAIN. By Sir J. Y. SIMPSON, Bart., M.D. D.C.L., Professor of Medicine and Midwifery in the University of Edinburgh.

In the last number of the Medical Times and Gazette there is copied the chief portion of a letter published at Boston by Dr. Bigelow, senior, and referring to the history of anæsthetics in America and this country. Early in this year I forwarded the following communication to Dr. Bigelow in reply:—

"EDINBURGH, January 3, 1870.

"DEAR SIR:—There has been sent to me from America a Chicago newspaper, containing a letter of yours which is alleged to have been published in a late number of the Boston Medical and Surgical Journal. In this letter you speak of the bestowal upon me, some months ago, by my fellow-townsmen, of the rank of an honorary burgess of Edinburgh; and you comment, in terms of bitterness, upon the subject, and upon what I said—or rather upon what I did not say—on that occasion. I feel assured that if you or any one else had felt as nervous and timid as I did on rising to address the public meeting which witnessed the presentation, you would not be astonished at anything I did allude to, or did not allude to; or that I failed in adverting to numerous matters to which I might and ought to have adverted.

"The *gravamen* of your charge is this:—In his extempore address to me on the occasion in question, the Lord Provost thought fit to allude to some of my professional investigations, and specially to those bearing on anæsthetics, acupressure and hospitalism. He spoke of the application of *chloroform* to the assuagement of human suffering as among the 'greatest medical discoveries in modern times.' In replying on the spur of the moment to this, among other remarks, I stated simply in a sentence the amount to which chloroform was now used for anæsthetic purposes, by adverting to the great extent to which it was manufactured by one single firm at the present day. I might, if there had been time, have added evidence of the extent to which it has superseded all previous anæsthetics, by stating the amount of its manufacture by other firms here and elsewhere. But I had many other subjects to advert to besides chloroform, and only a few short minutes within which I was expected to include them all. According, however, to your view, I am very deeply blameable for not taking up a subject which the Lord Provost did not allude to—viz. the history of anæsthesia. You hold that I should have enteted, to a greater or less extent, into some historical notice of anæsthetic agents. The history of them has always taken me a full hour in my University lectures; and in these lectures I have year after year paid heartily every due compliment to the most important part borne in the consummation of the practical application of anæsthetics in America, particularly by the cities of Hartford and Boston, and specially by the energy and genius of Dr. Morton. Surely, however, it would have been sadly out of place, on such an occasion, and before such an audience, to have shown that before I discovered the application of chloroform to anæsthetic purposes, numerous other agents had been previously suggested and used for the same object—as sulphuric ether by Drs. Jackson, Morton and Marcy; as carbonic acid by Dr. Hickman, in imitation of the experiments performed for ages on the poor dogs at the Grotto del Cane; and as nitrous oxide (an agent extensively employed as a dentist's anæsthetic at the present hour), and first proposed for 'destroying physical pains' during 'Surgical operations' by Sir Humphry Davy. Or should I, in your opinion, have even gone still further back in therapeutic history, and described what, doubtless, as a former lecturer on Materia Medica, you are well acquainted with—namely, the other soporific vapours and measures employed by different olden Surgeons in Greek, Roman and Mediæval times, with the view of rendering their operations painless to the patient? In that way I could have easily shown that the idea of making a patient anæsthetic before subjecting his body to the knife or cautery was a kind of knowledge familiar even to non-professional writers of mediæval and of later times, and that some theological writers—like Origen, for example, in the third century*—allude to the artificial production of anæsthesia in Surgery as a well-known practice; while in reference to

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* In the proceedings of one of the councils of the English Church held at Exeter in the year 1287, the statement of Origen is cited—"Respondit Origenes et dicit—'Quando volunt medici incidere aliquos, vel urere, dant eis bibere aliquem potum, qui facit eos profunde dormire, ita quod amentes fiant et sic non sentiant.'" (See Wilkin's Concilia Magnæ Britanniæ et Hiberniæ, vol. ii. p. 162.)

Scotland I might have cited Abbot Bower; who lived and wrote about the year 1400, within ten miles of Edinburgh, as telling us by what means anæsthesia in surgery was accustomed to be effected in those days, and what they gave to patients—'secandi, ut possent sine dolore secari;' or I might have adduced to monk Joceline as alluding, with circumstantial details, to an alleged instance of it in Scottish hagiology, as early as the sixth century. All this, and much more, might have been mentioned; but all this would have been in my opinion—though not apparently in your opinion—totally misplaced and grievously out of order; just as any historical disquisition on the previous employment of the ligature, torsion, etc., in hæmorrhage, would have been when I briefly alluded to acupressure.

"In the way of a climax, you terminate one of the paragraphs in your letter with the statement that I was not the 'first man' to inhale a vapor to such an extent as to destroy sensibility. Most certainly I was not; and certainly I was not foolish enough to claim to be so. In the course of my investigations I have, however, experimented upon myself with various vapors, the innocuous or the poisonous effects of which upon the body were previously altogether unknown and unascertained; and I have sometimes suffered in consequence. As a Professor of Therapeutics, you must surely be well aware that the first experiment of breathing a vapor to such an extent as to destroy sensibility was made neither in America nor in our own days. Without adverting to the acknowledged fact that it was accomplished with the vapors driven off by hypnotic vegetable extracts by the older surgeons, from Hugo de Lucca and Theodoric downwards, let me remind you that Sir Humphry Davy boldy—and notwithstanding he had witnessed occasional deaths in animals from it—made the experiment to which you advert at times upon himself in the last century with nitrous oxide, and further found that headache and other pains disappeared under its influence.

"About forty years ago, Faraday in this country, and Godman in America, showed, as the result of their observation and experience, that the effects of the inhalation of the vapor of sulphuric ether were quite similar on the nervous system to those produced by the inhalation of the vapor of nitrous oxide gas—a truth subsequently proved by many pupils in many chemical and other schools in your country, as well as in mine,* by their inhalation of ether. Your remarks, as far as I understand them, imply that it is your belief that Dr. Morton was the 'first man, of 'sufficient courage' to breathe 'a vapor' so as to produce a state of anæsthesia. But you must know as well as I do, from the official documents laid before the Senate of the United States, that this is doubtful even as regards the course of matters in America; for it appears in these documents (1st) that Dr. Jackson avers that he had breathed with this effect sulphuric ether earlier than Dr. Morton; (2dly) that before Dr. Morton made the ultimate experiment upon himself in 1846, he made it first upon others, and particularly upon his pupil Mr. Spears; and (3dly) that two years previously (or in 1844), Dr. Marcy, of Hartford, in Connecticut, had successfully excised a tumour from a man who had been rendered anæsthetic for the purpose by the vapor of sulphuric ether; whilst at the same early date, in the same city, Dr. Horace Wells had extracted teeth from a dozen or more patients rendered insensible by inhaling nitrous oxide gas† according to Davy's suggestion.

"There has lately been raised in Boston a monument in commemoration of it being the birth-place of anæsthesia in Dentistry and Surgery in 1846. But have the erectors of this monument cut upon it the names of either of your fellow-citizens, Dr. Mortoh or Dr. Jackson, as the first investigators, or the names of Warren and Heyward, as the first Boston Hospital Surgeons who operated upon patients under the influence of sulphuric ether? Or have they generously inscribed upon its sides any allusion to the fect that two years previously anæsthetics had been inhaled successfully in Dentistry and Surgery in the city of Hartford? I have been informed that there does not yet appear upon the monument the name of a single American chemist, dentist, or surgeon. Is it so? You have the monument. Have you not had the man or men?

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* I have elsewhere shown, in treating of the therapeutic history of sulphuric ether, that its employment by inhalation—first pointed out by Dr. Pearson in 1796—in asthma, etc., is mentioned by many writers on Materia Medica before 1846, as by Duncan, Murry, Brande, Christison, Thomson, Pereira, Nysten, Vogt, Sundelin, etc., in Europe; and its powers of producing effects like intoxication, or like the influence of nitrous oxide gas, are mentioned in America by Godman (1322), Samuel Jackson (1833). Wood and Bache (1834), etc. (See Anæsthesia, or the Employment of Chloroform and Ether, p. 190. Philadelphia, 1849.)

† When, however, in December, 1844, Dr. Horace Wells conceived the idea that the inhalation of nitrous oxide gas would render dentistry anæsthetic, he was evidently unaware of the previous suggestion of Sir Humphry Davy. The idea occurred in consequence of a Mr. Cosley, at a public lecture and exhibition of "laughing gas" at Hartford, striking and injuring his limb against the benches without suffering pain. On the subsequent day, to test the truth of the idea, Dr. Well himself breathed deeply and fully the gas, and had a molar tooth extracted from his own mouth by Dr. Riggs without pain. *This was the first anæsthetic operation in America.* Thus, in that country, the idea itself of producing artificial anæsthesia by inhalation, and the reduction of that idea to actual practice, occurred at Hartford on December 10 and 11, 1844. The first anæsthetic operation at Boston—viz, the extraction of a tooth from a man named Frost—did not occur till 30th September, 1846, or nearly two years subsequently. (See Official Documents, Appendix, pp. 91, 95, etc.)

"You commence the concluding paragraph of your letter by averring that anæsthetic inhalation 'began' (to use your own words) 'in this country [America], and was first used in the extraction of teeth, and afterwards in capital operations in the Massachusetts General Hospital and in obstetrical practic.' Your words so far affirm that anæsthetic inhalations, besides being first employed in America in dentistry and surgery, were in your country also first used in 'obstetrical practice.' You must excuse my saying that this last assertion is unaccountably incorrect. The use of anæsthetic inhalations in obstetrical practice was begun and extensively followed out in Edinburgh, weeks or even months, before it was tried in Boston, or in America. The first case of midwifery in which sulphuric ether was adopted as an anæsthetic occurred here under my care on January 19, 1847, and and was soon afterwards reported in the journals of the day. On March 1, 1847, was published by me in the Edinburgh Medical Journal, an essay on the subject, containing a series of obstetrical cases, and a longish discussion of the question of the applicability of anæsthetics to midwifery. It was not, however, according to the published evidence of your townsman, Dr. Channing, till April 7, that the first case of the employment of anæsthetics in midwifery occurred in America, and the second did not take place till May 5. (See Dr. Channing's Treatise on Etherification in Childbirth, p. 26). But before the date of these two cases the practice had been fully established in Edinburgh and elsewhere.

"Perhaps you and I, as parties implicated, are not adequate judges as to whether your statement on this point is candid and creditable, or utterly the reverse. But I willingly leave the decision of this to the feelings and verdict to an honorable profession.

"You think me greatly blameable because—in the way of omission—I did not advert to the previous application of sulphuric ether in America as an anæsthetic when the employment of chloroform was referred to. I think, on the contrary, that you are infinitely more blameable, because, without the slightest reason or ground—and in the way not of omission but of deliberate commission—you have in this letter of your attempted to appropriate for your city and country what indubitably belongs to my city and country—namely, the credit of the first introduction and establishment of anæsthetic inhalation in obstetrical practice.

"I have the honor to be, yours truly,
"To Dr. Jacob Bigelow, Boston. J. Y. SIMPSON."

The official documents on the modern history of anæsthesia in America referred to in the preceding letter are contained in a thick but I believe unpublished volume of seven or eight hundred pages, printed at the expense of Dr. Morton, and entitled "Statements supported by Evidence of Wm. T. G. Morton on his Claim to the Discovery of the Anæsthetic Properties of Ether, submitted to the Honorable the Select Committee appointed by the Senate of the United States:" Washington, 1853. There is included a "Report to the House of Representatives of the United States of America, vindicating the Rights of Charles T. Jackson to the Discovery of the Anæsthetic Effects of Ether Vapor, and disproving the claims of W. T. G. Morton to that Discovery." Those interested in the question will find the whole volume full of curious and important matter in the way of memoirs, documents, affidavits, examinations of witness, speeches, etc.—*Med. Times and Gazette.*

ART. III.—ON THE NATURE AND TREATMENT OF PULMONARY CONSUMPTION. By DR. C. J. B. WILLIAMS, London, England.

On taking a retrospect of an experience of forty years in the treatment of pulmonary consumption, I can trace a remarkable improvement in its success, as judged by the results. During the first ten years of that period the beneficial effects of the treatment were very limited, being chiefly confined to incipient cases, and to those who were able at an early stage, and for long continuance, to resort to more favorable climates, such as can be obtained by voyages to Australia or India. My general recellection of the histories of the developed disease at that time is that of distressing tragedies, in which no means used seemed to have any power to arrest the malady. The tardative and palliative treatment employed was little satisfactory; and life was rarely prolonged beyond the duration of two years, assigned by Lænnec and Louis as the ordinary limit of the life of the consumptive.

In the next period of ten years (from 1838 to 1848) a marked improvement took place in the results of treatment apparently in connection with the habitual use of mild alterative tonics, as they might be termed, particularly iodide of potassium, with sarsaparilla or other vegetable tonic. These were first given in conjunction with liquor potassæ or an alkaline carbonate; but the lowering effect of the alkali led to the substitution of a mineral acid, generally the nitric; and a combination of this description (iodide of potassium, two grains; dilute nitric acid, fifteen drops; tincture of hops and compound fluid extract of sarsaparilla, of each one drachm, with an ounce of water or infusion of orange-peel) became the favorite prescription until it was superseded by something which was more efficacious. Several of the earlier of the cases recorded were treated in this way, and with improved results in respect of the general health of the patients, and diminution of the cough and expectoration.

It was in the latter half of this period that chemists began to produce cod-liver oil of sufficient purity and freshness to be fit for the human stomach; and I have no hesitation in stating my conviction that this agent has done more for the consumptive than all other means put together. And so far is this remedy from having "had its day and gone out of fashion," that in my experience, its usefulness and efficacy have gone on increasing in proportion to the greater facilities for obtaining it in a pure state, and to the improvements in the manner of administering it, in combination with various tonics, and in connection with certain rules of diet and regimen. Many of the cases narrated in the preceding papers are striking proofs of the efficacy of this remedy, not only in the general results of cure or prolongation of life, but also in detached passages of the abridged histories, in which improvement or deterioration in the symptoms corresponded respectively with the regular use of the oil, or its discontinuance.

The cases selected to exemplify the preceding papers have been taken from the records of my experience during sixteen years up to 1857. They are a very small sample compared with the whole number under my care during that period; but they are selected, not as being more favorable, but simply because they remained under observation for a year and upwards, and therefore gave the opportunity of more correctly judging of the results of treatment than those seen for a shorter time; and although this very ground of selection implies that the cases eventually became chronic, yet many were acute in the first instance, and their surviving into the chronic state may fairly be ascribed to the treatment. In stating that the average duration of life in phthisis has, during my experience of forty years, been at least quadrupled or raised from two to eight years, is below the actual result as calculated by my son; for of the five hundred cases, three hundred and eighty were still living at the last report, and many of these are likely to live for many years to come. I may add further, that the results of the last ten years' experience, from 1857 to 1867, which have not yet been calculated, will, in all probability, be still more favorable as regards the number of cures and great impaovements, and the expectancy of life, although the time does not allow of such high figures in actual duration of life.

In conclusion, I will endeavor to give a brief general view of the treatment which I have commonly adopted. As we have been led to conclude that consumption is essentially a disease of degeneration and decay; so it may be inferred that the treatment for the most part should be of a sustaining and invigorating character. Not only the most nutritious food, aided by a judicious use of stimulants and of medical tonics, but pure air, with such varied and moderate exercise in it as the strength will bear, and the enlivening influence of bright sunshine, and agreeable scenery and cheerful society, are among the means best suited to restore the defective functions and structures of framés prone to decay.

This is the most comprehensive view that can be taken of the means found to be most effective in the prevention and cure of consumptive diseases; but when we eome to examine the details of cases, we find that the treatment is by no means so simple a problem, and that varied and even opposite remedies are required to control the different morbid actions concerned in developing or in aggravating the malady. Inflammation is by no means an essential part of tuberculous consumption, and yet, as we have seen, many cases originate in inflammation, and in many more this process is instrumental in aggravating and spreading the destructive ravages of the disease; therefore, remedies that may be called antiphlogistic frequently have to be used in this treatment.

I apprehend that most practitioners in this country are agreed in considering that consumption should be generally treated on a tonic and sustaining plan; and that the nourishment and strength of the system should be supported by various tonics and cod-liver oil, as well as by the most nutritive articles of diet. But when the disease is ushered in with symptoms of acute bronchitis or pneumonia, with its attendant fever and scanty disordered secretions, it is obvious that such treatment is wholly unsuited for the occasion; and that remedies of the mild antiphlogistic kind, such as salines, with or without antimony, blisters, and cataplasms, and sometimes even moderate leeching or cupping, will give most relief, and will prepare the patient for the safe administration of the sustaining class of remedies. In former years in this country (as still in many cases abroad) the antiphlogistic and starving plan was carried on too long and too far; but it appears to me that there is now a tendency too much to the opposite extreme, so that consumption is treated too exclusively with tonics, stimulants, and full diet. I quite admit that this is the better extreme of the two; and it may fairly be stated that the sooner and the more constantly patients can be treated on this plan, the better. But in case of active inflammation, continued heat of skin, hard racking cough (dry, or with viscid and tinged expectoration), much pain or soreness of the chest or side, it answers well to withhold or withdraw the stronger stimulants and tonics, and for a time—it may be for a few days only—to substitute cooling and soothing remedies, with moist epithems or counter-irritants on the chest, and, more rarely, local depletion. But this discipline, which is exceptional, should as soon as possible be replaced by what may be called the regular treatment by cod-liver oil and tonics, and a more generous diet. The transition need not be abrupt. So far as regards cod-liver oil and the mild acid tonics, with which I generally combine it, the change may be made long before the inflammatory complication has subsided. A dose of these may be given after the morning, and perhaps after the midday meal, whilst still the saline is taken in the evening and night, and whilst blisters or other counter-irritants are in full operation.

So soon as the nocturnal heat of skin subsides, and the cough becomes less urgent, and the urine more free, the salines may be replaced by a mere cough linctus, if that be needed; the counter-irritation moderated, and the tonic, given with the oil, gradually strengthened by the addition of small doses of salicine, quinine, or iron. These two last tonics are of great use when they are well borne, as their influence in strengthening the muscular system, and in improving the condition of the blood, is greater than that of any other drug; but their use requires much discretion and watchfulness, for they often increase the lingering or inter-current inflammations, with their attendant pain, constriction, cough, and viscid expectoration; and not unfrequently they derange the functions of the stomach and bowels. It therefore often happens, when the patient can not be seen frequently, that it is safer to be content with a milder tonic, such as calumba, cascarilla, or chiretta, which may be continued for weeks and months together, in conjunction with the oil, than to give those that are more powerful, but which, by occasional disturbances, may prevent the continuance of the remedy.

But the great remedy, more essential and more effectual than any other, is the cod-liver oil; and we may well bestow a little consideration on the mode of using it to the best advantage.

It is now pretty generally admitted by the profession that the pure, pale oil, simply extracted from the fresh, healthy livers of the fish, is that most suitable for the majority of patients, as being less unpalatable and at least as efficacious as the impure kinds. Since I first recommended this pure oil (*London Journal of Medicine*, January, 1849), it has been so extensively prepared and used that it is now one of the most important articles in the materia medica, and the universality of its introduction is a strong proof of its claim to public favor.

On the mode of operation of the oil, and on the best methods of administering it, I have little to add to what I published twelve years ago ("Principles of Medicine," 3d edit., page 487). To that I must refer for details which would be too long for quotation here, but I may give the following brief summary of my opinions and experience on the subject:

Cod-liver oil, when taken into the system in sufficient quantities, and for a sufficient length of time, acts as a nutrient, not only adding to the fat of the body, but also promoting the healthy growth of other tissues; and in some way, as an alterative, counteracting the morbid tendency to the proliferation of the decaying cells of pus, tubercle, and kindred cacoplastic and aplastic matters.

That its efficacy depends much on its being absorbed freely into the blood, and, through the circulation, pervading all parts of the body, and thus reaching to the very seat of the morbid deposits and formations.

That the more fluid part of cod-liver oil surpasses all other oils and fats in the facility with which it forms emulsions, which are tolerated by the stomach and readily absorbed into the blood, without causing the nausea and bilious derangement that commonly result from an excess of fat food. This peculiarity may depend on the biliary and other matters contained in the oil, which in other instances of disease is found to act beneficially on the liver and other secreting organs.

That the best time for the administration of the oil is immediately after, or, to those who prefer it, at or before, a solid meal, with the constituents of which the oil becomes so intimately blended that it forms a part of the chymous mass, and is less likely to rise by eructation than when the oil is taken into an empty stomach. From this chymous mass, the oil being absorbed through the lacteals with the chyle, is less apt to disorder the liver than if absorbed through the veins of an empty stomach.

That as the use of the oil should be continued for a long time—perhaps for months, or even years—it is of great importance to conciliate both the palate and the stomach by giving it in a vehicle which may agreeably disguise its flavor and strengthen the stomach to bear it. For this purpose an aromatic bitter, such as the compound infusion of orange-peel, acidulated with a mineral acid, both to help to cover the taste of oil and also to suit the stomach, which should be duly supplied with acid during digestion, generally answers well. Syrup may be added according to the taste of the patient; or, still better, some bitter tincture, such as calumba, cascarilla, or quinine, in every case in which it is desirable to improve appetite and tone. In cases of peculiar weakness of stomach, with tendency to retching or nausea, strychnia, in a dose of from 1-32 to 1-24 of a grain, proves a most valuable adjunct to the vehicle. By its means I frequently overcome the fastidiousness of stomach arising from debility, hysteria, or indulgence in alcoholic liquors. Salicine is another efficacious alterative of the same kind. Either of these, although a powerful tonic, has none of the heating properties of quinine or iron. When the strong bitter taste is objected to, a pill, containing extract of hop or chamomile, or salicine, or quinine, may be taken after or before the oil and its vehicle.

The bulk of the whole dose of oil and vehicle should be small, so that it may be swallowed at a single draught; therefore, the vehicle should not exceed a tablespoonful, with, at first, a teaspoonful of oil, to be gradually increased to a tablespoonful. The dose of oil should rarely exceed a tablespoonful twice or thrice daily. When a larger amount is taken at a time, generally it either deranges the stomach or liver, or some of it passes unabsorbed by the bowels.

The acid may be varied according to circumstances. The nitric generally suits best in inflammatory cases, and those attended with much lithic deposit in the urine; but its tendency to injure the teeth is an objection to its long continuance. The sulphuric is more eligible where there is liability to hæmoptysis, profuse sweats, or diarrhœa. But in most cases, and for long continuance, I have found reason to prefer the diluted phosphoric acid, which may be termed the most physiological of the acids, tending to derange the chemistry of the body less than the others.

With some individuals the oil agrees so well, and so much improves their digestive powers, that they require few or no restrictions in diet; but this is not the case with the majority. The richness of the oil does prove more or less a trial, sooner or later, to most persons; and to diminish this trial as much as possible, it obviously becomes proper to omit or reduce all other rich or greasy articles of food. All pastry, fat meat, rich stuffing, and the like, should be avoided, and great moderation observed in the use of butter, cream, and very sweet things. Even new milk in any quantity is not generally borne well during a course of oil; and many find malt liquor too heavy, increasing the tendency to bilious attacks. A plain, nutritious diet of bread, fresh meat, poultry, game, with a fair proportion of vegetables, and a little fruit, and only a moderate quantity of liquid at the earlier meals, commonly agrees best, and facilitates the continued exhibition of the oil in doses sufficient to produce its salutary influence on the system.

In case of a bilious attack coming on, indicated by nausea; headache, furred tongue, offensive eructations, high-colored urine, and sometimes pain and tenderness of the right hypochondrium, it is necessary to suspend the oil, lighten the diet of the patient, and give blue pill or calomel with an aperient on alternate nights, and an effervescing saline two or three times during the day. A few days of this treatment will generally set the stomach and liver to rights, and the oil may be resumed, beginning with small doses at first. In all cases during the use of the oil the bowels should be kept regular in action; and if this can not be done by regularity of habit and diet, it should be effected by the use of a mild daily pill of rhubarb or aloes.

Such are the directions which have proved most effectual in the administration of a remedy which may truly be said to have so much altered the prospects of the consumptive as to give hope of cure in not a few, and of much prolonging of life in by far the greater number. But to induce patients to follow these directions, and to overcome their aversion to a remedy which the prejudice of some represents as disgusting, and the experience of many may find trying to continue for so long—the practitioner will often find it necessary to use all his powers of argument and persuasion. The great plurality of patients are amenable to reason, and are willing to follow any advice that is given with *confidence* and *clearness.* To those who demur or rebel it is generally expedient to tell the plain truth—that they have a serious disease, pretty sure to increase, and sooner or later to destroy life, if left to itself; but *here is the remedy*—the only one worthy the name, which if carefully and faithfully used may arrest and cure the disease, and is pretty sure to retard it and prolong life more than any other known means. If the physician believes this himself he will rarely fail to carry his patients with him. I believe it firmly, and I rarely fail to make the patient take the oil, and to persevere with it, in the experience and conviction that it is essential to his well-being and improvement. The proportion of recusants, either from waywardness of temper, fastidiousness of taste, or from intolerance of stomach, altogether does not exceed five per cent.

Although my long experience assigns to cod-liver oil a place far above all other remedies in the treatment of pulmonary consumption and its allied maladies, it has taught me to believe also in the limited efficacy of certain other agents, and it would not be fair to pass these over in this brief summary of treatment.

I have already mentioned a combination of iodide of potassium and nitric acid with a vegetable tonic, as having distinctly wrought some good in consumptive cases before the pure oil was introduced. I still sometimes use this medicine in the rare cases in which cod-liver oil disagrees or cannot be taken, and I think that it is improved by the addition of a drachm or two of pure glycerine to each dose. Glycerine by itself is of little use, but it is valuable as a lubricant and to sheathe the acrimony of mineral acids and other pungent medicines.

The hypophosphites of soda and lime, so strongly recommended by Dr. Churchill, of Paris, have in my hands proved decidedly beneficial in certain cases. They have been tried by Drs. Quain and Cotton, at the Brompton Hospital, with only negative results; but having met with several patients who distinctly ascribed their improvement to Dr. Churchill's treatment, I have thought it right to try them myself, both as a substitute for the oil and in addition to it. In the former way the results have not been generally satisfactory; the hypophosphite does not disagree, but there is no marked improvement as under the oil; and when they have been doing well under the oil, the patients generally lose flesh and strength when the hypophosphite is substituted for it. On the other hand, it has happened to me in several cases that a patient has long been taking the oil, and after having derived great benefit from it, halts in his improvement, or even loses ground, and then the addition of the hypophosphite has been followed by a marked change for the better; flesh and strength have been gained, and the chest symptoms have been more or less improved. In these cases I have merely added four or five grains of the hypophosphite to the vehicle in which the oil is given, always selecting the phosphoric as the acid, and generally substituting glycerine for the usual syrup. Such precautions are necessary, because the hypophosphites are very unstable in composition; the addition of nitric acid, or mere exposure of the solution to the air (if not guarded with glycerine or a good deal of syrup), being sufficient to convert them into inert phosphates. In my mixture of the hypophosphite with phosphoric acid, I presume the hypophosphorous acid is set free, and is the active agent in the compound. How it acts is quite uncertain. I cannot say that I agree with Dr. Churchill's views on the subject, even if I understand them. These hypophosphites seem to increase the failing powers of respiration and circulation. Can this be by increasing the affinity of the blood for oxygen, so that it can attract it and maintain the blood-changes even under the increased difficulties and obstructions produced by disease?

Perhaps the efficacy of the sulphurous acid—Dr. Dewar's remedy for consumption—may depend on an influence not altogether unlike that of hypophosphites. My experience of the use of the spray of sulphurous acids is limited in phthisis, and as far as it has gone has not been very encouraging. But I have found the spray a most useful and agreeable remedy in various affections of the throat, whether diphtheric or aphthous; and it has proved cleansing and soothing in some cases of foul ulceration of the throat, affecting both the larynx and fauces, generally syphilitic in origin, and sometimes ending in pulmonary consumption.

In connection with this subject, I must notice remedies administered by inhalation, which are really useful in certain cases, chiefly those in which the larynx and trachea are much affected, and in those attended with convulsive cough or offensive expectoration. I have generally found the use of inhaling instruments fatiguing and unnecessary. A quart jug of hot water, with a napkin from over the nose down to and around the jug to confine the steam, is all that is needed. To the hot water is added the drug to be inhaled; and creasote or carbolic acid, iodine, chloroform, oil of turpentine, and juice or extract of hemlock, are the articles which I have found most beneficial. A few drops of one, or of several of these combined, being put into the hot water, the inhalation is practiced through both mouth and nostrils without restraint or difficulty, and may be continued for five or ten minutes every night, and, if need be, repeated once or twice in the day. Although the chief operation of this medicated vapor is on the guttural and bronchial surface, yet a portion penetrates into the lungs, and is absorbed into the system; for iodine and oil of turpentine can be detected in the urine within a few minutes of the inhalation being made out. I may add, that the practice of painting the chest with tincture of iodine every night, as a gentle counter-irritant, is not without a certain influence in the way of inhalation; for a portion of the iodine evaporates, and slightly impregnates the air around the patient, and this atmosphere of iodine may not be without its influence for good.

The sulphurous waters of the Pyrenees are highly recommended by the French physicians in the treatment of consumption; and a few of my patients, after wintering at Pau, have found some benefit from the waters of Eaux Bonnes and Cauterets during the summer months. But in other cases, and these the greater number, more harm than good has resulted from their use. More or less excitement of the circulation and respiration is generally induced by the sulphur waters, and instead of inducing expectoration and subsequent relief to the cough and breathing, the critical improvement has not taken place, and the patients have come away weaker and more oppressed than they went. With all respect for our brethren across the Channel, so far as regards their cleverness in diagnosis, I do not hesitate to say that they are far behind British practitioners in their skill and success in the treatment of disease in general, and of diseases of the chest in particular. The same remark applies pretty much to the German doctors and their water cures, whey cures, and grape cures. Except in a few instances with the waters of Ems, I have hardly known any British pulmonary invalids derive any permanent benefit from these modes of treatment; but I quite admit that they are sometimes useful when the pulmonary disease is complicated with gout, or disorder of the liver and digestive organs.

Of far more importance in the treatment of consumption is change of air and climate. It is of the greatest consequence to the phthisical invalid that he should breathe as pure an air as possible, and that the influence of this pure air on the blood and on the body should be increased by such gentle and varied exercise in it as his strength and the condition of his organs will permit. This is the great object of our sending him to a warm climate in winter, and to a high and dry locality in the summer, that he may be as much as possible in the *open air*, with its exhilarating and vivifying accessories of light, purity, and freshness, without the chilling operation of cold and wet in the winter, and the enervating and exhausting influence of oppressive heat in the summer. I can not in this place pursue this important subject into the details of its application to the different forms and stages of disease, and the varieties of air and climate most suitable for them; but I may refer to my son's little work on climate for concise information on these points. I would only add further, in conclusion, that several of the most successful cases which have been recorded in these papers are illustrations of the great benefits to be derived from the well-directed voyages and change of climate, in addition to the treatment which has been summarized in the present pages.

In conclusion, I trust that the preceding papers have proved what I stated at the commencement; that, powerless as medicine is in the overwhelming and rapd types of pulmonary consumption, it has yet considerable influence over the milder forms; and *that under careful treatment life may be prolonged for many years in comfort and usefulness, and in not very few cases the disease is so permanently arrested that it may be called* CURED—*London Lancet.*

ART. IV.—MECHANISM OF THE CREPITANT AND SUBCREPITANT RÂLE. By AUSTIN FLINT, M.D., New York.

At a meeting of the New York Medical Association, Dr. Austin Flint read a paper on "The Crepitant and Subcrepitant Rale." He showed that these rales could be perfectly imitated by means of the article known as "patent India-rubber sponge" lately introduced. Compressing the sponge and letting it expand near the ear—dry for the crepitant, and moist for the subcrepitant, rale—the latter would be heard during both compression and expansion, the former during expansion only. This illustrated the true theory of the crepitant rale, that it is caused by the sudden separation of coherent surfaces, and not by bubbling—an explanation first propounded Dr. Edson Carr, of Canandaigua, N. Y., in 1842, (Am. Jour. Med. Sci., Oct., 1842, p. 360). The history of opinion upon this subject, from the time of Læennec to the present, was reviewed; showing that most authorities still adhered to the "bubbling" theory, though a few had adopted Carr's explanation without giving him credit for priority. The important points of this valuable paper were summarized in conclusion, as follows:

"1. The crepitant rale is caused by the separation of the walls of the air-vesicles and bronchioles, in the manner explained by the late Dr. Edson Carr.

"2. It is highly probable that the peculiar ("vesicular") quality pertaining to the inspiratory sound in the healthy murmur of respiration is due to the same cause, the cohesion of the walls of the air-vesicles and bronchioles not being sufficient to give rise to the crepitant rale.

"3. The subcrepitant rale is caused by the bubbling of liquid in the minute bronchial tubes, and also in the air-vesicles and bronchioles.

"4. The essential distinctive character of the crepitant rale is its dryness. The term 'dry crackling' expresses this character, whereas the phrase 'fine bubbling' expresses the character of the sound in the subcrepitant rale. In addition, the crepitant rale is not produced in expiration as well as in inspiration.

"5. Very fine bubbling, due to the liquid in air-vesicles and bronchioles, resembles the fine crackling sound which characterizes the crepitant rale; and the discrimination of the former from the latter requises a nice pereeption of differences in sound, and some practice in comparing the two rales. The artificial production of the two rales (by means of the 'rubber-sponge') may be made highly useful by affording this practice.

"6. The crepitant and subcrepitant rale are not infrequently found in combination. They are likely to be conjoined whenever the air-vesicles and bronchioles contain liquid of any kind.

"7. In view of the fact that for the artificial production of the crepitant rale no liquid is necessary, and in view of the fact that for the production of fine bubbling sounds an extremely small amount of liquid only is required, whenever in disease a crepitant rale exists, withthe coexistence of the subcrepitant rale, it is probable that there is a morbid adhesiveness of the inner surface of the air-vesicles and bronchioles, without the presence of an appreciable amount of liquid. Hence, in the cases in which the crepitant rale exists alone, either in the first stage of pneumonia or in the resolving stage; the morbid product within the air-vesicles and bronchioles must be either a glutinous matter sufficient to give adhesiveness to the wall, but not enough for bubbling, or the product is a semi-solid, in which bubbles are not readily produced; and in cases of œdema of the lungs, or when blood is present in the air-vesicles and bronchioles, the crepitant rale can hardly be expected to occur without being associated with the subcrepitant.

"8. The characters of the subcrepitant rale are materially the same, although the bubbling is produced in liquids differing as regards consistence."—*Med. Record.*

ART. IV.—NOTE ON THE USE OF HYDRATE OF CHLORAL.—

By JOHN W. OGLE, M.D., Physician and Lecturer on Pathology, St. George's Hospital, London, England.

Having for several years (almost, in fact, since Liebrich's observations on this agent were made known in England) made frequent trials of the effect of chloral, both in hospital and in private practice, I have thought it might now be opportune to add my testimony to that of others in regard to the action of this remedy. In the Lancet for October 16th last, a statement was made that I had given the chloral with good results in various cases and in sundry forms of disease. At that date, partly from deficient acquaintance with its properties, and in part owing to its rarity and consequent dearness,* my doses ranged from four or five grains, for the adult, up to twenty grains, but did not exceed beyond. In a slight case of delirium tremens, twenty grains had acted well in procuring sleep and quiet, but much less quantities had proved to be serviceable doses in allaying pain and irritation in chronic peritonitis, in rheumatism, acute and chronic. Since then I have given a greater scope to its trial, and have consequently exhibited it in doses up to sixty grains, in several cases commencing with that quantity; and altogether must have given it to between thirty and forty different cases, in many instances for several days in succession. Such being the case, I can not, of course, give the details of my cases in a mere "note" like the present one; nor, indeed, I imagine would any good follow it I did, inasmuch as, with reference to the effects of the remedy, I should merely have to repeat over and over again the same observations, and thus only weary the reader.

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*At that time it cost 12s. per oz., and was procured from Berlin by Messrs. Bullock and Reynolds. At present it can be bought for 1s. 6d. per oz.

In many cases of acute rheumatic fever, even when sleep had been for several nights absent or nearly deficient, the chloral has proved most useful in half-drachm doses; and in three or four cases of acute gout, the pain and inflammation of the parts have quickly and greatly yielded to it. In subacute and muscular rheumatism similar results have followed. Considering the supposed condition (diminished alkilinity, &c.) of the blood in cases of rheumatic fever, it was interesting to note that it did not appear more necessary to give larger quantities of chloral than in other conditions when the blood was deemed more alkaline. In some cases of scarlet fever much rest and comfort and sleep have followed its use in fifteen and twenty grain doses. In neuralgia, and in some diseases of the nervous centers in which pain was troublesome at the periphery, it has proved very useful, but not pointedly so when the pain has been excessive. For example, within the last few days I tried it in the case of an adult suffering great pain in the abdomen, apparently from a sprain (the spine being probably implicated), causing almost complete sleeplessness at night for several weeks, but sixty grains only caused slight relief. Subcutaneous injection of one quarter grain of morphia, along with one sixtieth grain of sulphate of atropia, caused, on the subsequent night, five hours of good repose.

In one or two cases of want of sleep from over-exercise of the mind, the result of study and teaching, I have found it most useful, and also in the want of sleep of old age. I have not noticed that the drug has had less effect on those who habitually took large quantities of alcoholic drinks than upon others.

In only two cases have any evil or unpleasant effects followed its administration, viz. peculiar sensations and uncomfortableness about the head. In none has vomiting resulted. Nausea in some cases has, apparently from distaste, when the chloral was only given in plain water.

Dr. Tuke, of Chiswick, has, however, informed me that in a case of insanity its use appeared to be followed by much mental disturbance; and in a case of mania *a potu* which I saw at Clapham with Mr. Taylor, that gentleman said he had twice given chloral in the case without any good result. He had only given it, I think, in twenty-grain doses. Once or twice I had it injected subcutaneously, but so much local irritation followed that I determined not to repeat its injection. In one case much tingling down the arm which was injected followed. Hitherto I have not had occasion to give it in the form of enema.

But the cases in which I have derived the most satisfaction in giving the chloral have been those in which, by their nature, preparations of opium and morphia have been contra-indicated, as, for example, certain cases of cardiac disease, certain cases of brain disease, in which cerebral congestion appeared to be imminent; but especially cases of so-called uræmic poisoning, in which one naturally feared to risk the use of opium or its derivatives.* Its effect in one case of mania, convulsions, and at times semi-coma, in connection with renal disease and syphilis, were very striking.

In many of such cases, general nervous tranquility and sleep of a most comfortable kind, and frequent subduing of dyspnœa and painful symptoms, have attended its use. In combination with digitalis, its effects in some cases of heart disease are often peculiarly satisfactory. As respects the mode of its exhibition, owing to its unpleasant flavor, and in some cases nauseating taste, I have generally given it in the compound infusion of orange, with a few drops of spirits of chloroform or spirit of peppermint; or in some recent cases, as recommended by Mr. Squire, with syrup or tincture of tolu. This is a most pleasant combination. In two cases of acute gout, in which I gave it in twenty-grain doses, continued every four hours for several doses, I found no alteration in temperature resulting from its use; neither in these cases, although the acute pain, &c., was diminished, did

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*I can not help stating my belief that in kidney disease with uræmic poisoning we may be *too* cautious as regards giving opium. I lately saw a case in which very distressing symptoms in such a condition were relieved by a morphia draught, which I was long in assenting to. I lately attended the case of a lady with renal dropsy (with Dr. White), who had violent pain on breathing down one side of the chest, preventing sleep, in whom morphia, given by Dr. White, acted "like a charm."

any manifest hypnotic effect follow.† I suppose I am not wrong in stating that when great pain has to be antagonized by sedatives, we often find that it is alleviated without any correspondent and positive sleep being induced.

Of course it has also not unfrequently happened, as often occurs when other sedatives are given that in certain idiosyncrasies, and under certain circumstances, the chloral does not answer expectations.

In the above observations I have merely given a general *résumé* of my own experience of the use of this remedy. I have not up to this time had any experience of its properties in the case of children.

I will bring this note to an end by quoting a letter which I received from Dr. Miller, of Blackheath, referring to the use of chloral in the case of a member of a family with which I am acquainted. His words (written November 29th last) which I have permission to quote, are as follows:

"Mr. T—— is eighty-two, of a very excitable, nervous temperament, very vigorous for his age in both mind and body, but afflicted with an irritable bladder and by very bad nights. This want of sleep, which also exists in other members of the family, has existed for many years, but is now much aggravated by the state of the bladder; so that when excited by business or other anxiety, the night is passed in efforts at micturition every ten minutes or quarter of an hour. Every possible narcotic has been prescribed for him at various times, either without any effect, or, in the case of opium and its derivatives, with the production of so much nausea and discomfort afterwards as to be practically useless. Nepenthe agreed the best, but has been taken so long by Mr. T—— as to have no effect in inducing sleep. Bromide of potassium has failed after constant trials, even in two-scruple doses. I was glad, therefore, to try the effect of chloral, beginning with twenty-five grains in a little syrup and water at bedtime. This quantity, given on two occasions, produced considerable comfort and quiet, but did not much increase the actual sleep. Thirty grains were given after a day or two's interval, producing more sleep than he ever remembered to have had at one time. He slept very soon after taking it at 10 P.M., and awoke after about three hours, only to sleep again till about half-past 6, and felt very drowsy when rising (about 7). No bad effects that I could observe have followed its use. The calls to empty the bladder were of course greatly diminished at night, as was also the quantity of urine; so much so as to excite some alarm in Mr. T——'s mind as to the possible effects on his constitution. The chloral was taken sometimes two or even three nights in succession, and then left off for as many; the good effects being as conspicuous as ever until last night, when, after its omission for two nights, it, without apparent cause, produced no appreciable effect either in inducing sleep or restraining the action of the bladder. The chloral has been taken now eleven times, but I fear is losing its effects unless increased. The fresh and cheerful aspect of my patient after a dose on the previous night, as compared with his appearance after a bad night, was most striking. No loss of appetite or constipation ever ensued.

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† I propose trying it in several other acute diseases, and in fever of various kinds. I may here also mention the case of a gentleman who was dying with renal disease, in which case the medical man withheld calomel as an aperient, fearing ptyalism. Much uneasiness in abdomen existed, and was all cleared off by a good dose of calomel given by another attendant.

"I trust you will excuse this imperfect account of my very limited experience of what appears to be a very valuable drug."

I have not since heard whether the chloral was continued further in the case.—London Practitioner.

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*Since writing the above I have received the following note from Dr. Tuke:

"I ordered it for a gentleman long the subject of acute melancholia, who never could sleep without morphia, and in whose case three grains of morphia failed to procure more than three or four hours' sleep. The exhibition of twenty-five grains of the chloral hydrate induced in this case profound sleep for nine hours: but on awakening, his family were much alarmed at the state of collapse he appeared to be in. His medical man was sent for, and I saw him later. I found him then recovered. He has since taken fifteen grains nightly, with the result of becoming quite well. The class of cases I have used it in has been restless mania, and especially in puerperal cases I know of no sedative so safe or so certain in proper doses. I find the tolerance of it very different in different cases, but twenty grains are quite enough for the first dose. I saw, in a case of acute mania last week, twenty grains produce eleven hours' sleep."

ANALYTICAL DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."—Plautus.

Art. I.—Analysis of Various Articles. Published in the Medical Times and Gazette, the British Medical Journal and the London Lancet, etc. (Original copies.) By Prof. Jas. M. Holloway, M.D.

Iodide of Potassium in Skin Diseases.—Dr. McCall Anderson, in his lectures upon syphilitic skin diseases, thus summarizes the indications for the employment of iodide of potassium:

I. The longer the interval which has elapsed between the contraction of the syphilitic taint and the development of the eruption, the more likely it is to be of service.

2. If the patient is cachectic, it is, as a rule, to be preferred to mercury, except in recent cases of syphilis, when the mercurial vapor bath, or some such treatment, is more likely to prove successful.

3. The more extensive the tertiary eruption, the more certain is it to yield to iodide of potassium; although to this rule there are numerous exceptions.

4. If there is any tendency to the syphilitic disease of the nostrils or neighboring parts, iodide of potassium should be withheld, or given with great caution, for, if it produces coryza, it is very apt to aggravate the morbid condition of the parts.

5. It should be given in full doses.

The Alkaline Sulphites and Hyposulphites in Skin Diseases.—Dr. Anderson, in the same series of lectures, calls attention to the advantage of the above named agents in the treatment of multiple furuncles. Acting upon the belief that impurity of the blood lies at the root of those cases of rucurrent furunculi, in which no local or constitutional cause can be detected, he was surprised to witness the prompt action of the hyposulphite of soda. Before giving the remedy the bowels should be regulated, if necessary. It should be given largely diluted. The following is a pleasant formula: hyposulphite of soda, one and a half ounce; simple syrup, one ounce; cinnamon water, twelve ounces; dose, a tablespoonful, in a large wine glass full of water, thrice daily before eating.

Formula for Iodide Potassium in Cachectic Subjects.—Ammonia-citrate of iron, three drachms; iodide of potassium, one ounce; syrup of ginger, six ounces; compound infusion of gentian, eight ounces; water to twenty-four ounces; dose, a teaspoonful in a large wine glass full of water, thrice daily.

Chloral Hydrate in Acute Traumatic Tetanus.—Dr. Alex. Ballentyne, of Edinburgh, reports in the Lancet, the details of a case of acute tetanus terminating in recovery under this remedy. A thorn, under the left thumb nail, induced the tetanus; the tonic and clonic spasms of which were well marked. The tetanus supervened on the *fourteenth* day after reception of wound. The patient, in three weeks, took six and a quarter ounces of the chloral, being an average of two to two and a half drachms per diem.

Dr. B. has given the chloral, with good effects, in the treatment of whooping cough, in all varities of neuralgic pain, in the insomnia of drunkards, in aggravated hysteria, and in one case of acute mania.

Chloral in Chorea.—James Russell, M.D., Birmingham, reports in the Times and Gazette, a care of severe chorea during pregnancy successfully treated with hydrate of chloral. Full doses of bromide of potassium had failed. The chloral was given daily from October 30 to November 10. The movements were controlled during sleep, but returned upon her waking, but with less violence. She was for the most part unable to chew or to feed herself, requiring the use of nutrient enemata, containing cod-liver oil and quinine. She left the hospital on December 10, much improved in health and strength, presenting only the symptoms of a mild attack of the disease.

Composition of Chlorodyne.—Mr. Edward Smith gives the following result ot his analysis of this well known secret remedy: Chloroform, ʒ iv; morph. mur., gr. xx; ether, rect., ʒ ii; ol. menth pip., *m* viii; acid, hydrocyan dil., ʒ iv; tr. capsici, ʒ vi; mist. acac, ℥ i; theriacæ to ℥ v.

Ammonia hypodermically in Collapse from Uterine Hæmmorrhage.—Dr. E. G. Wake, of Collingham, reports a case of collapse from the above cause, in which the pulse was not felt at the wrist for more than one hour. In his eagerness to apply a powerful remedy, he injected a few minims of strong liquor ammonia over the sternum. This operation was repeated three other times, upon other parts of the body. He introduced, at each injection, from ten to twenty minims. The patient rallied speedily under the influence of the stimulant and made a good recovery. The treatment, however, was followed by four frightful sores.

Successful Extirpation of one Kidney.—Mr. Spencer Wells, in a letter to the Times and Gazette, quotes the following paragraph from a letter written to him by Prof. Wagner, of Königsburg: "As I passed through Heidelberg, I saw a patient of Simon's whose case will interest you extremely. A provincial Surgeon had performed ovariotomy for her; and, on account of inseparable adhesions, had removed both ovaries and the uterus as far as the neck. The patient recovered. It appeared, however, that the operator had also injured the right ureter, for a urethral fistula formed in the cicatrix in the abdominal wall. This led to the patient going to Simon. After several unsuccessful attempts to cure the fistula, Simon at last *extirpated the right kidney.* He went in from the lumbar region, shelled the kidney out of its capsule, tied *en masse*, and cut it away. I saw the patient *cured*, and going about with the fistula cured. The ligature threads had not come away. Simon now proposes extirpation of a kidney for such diseases as echinococcus, abscess, hydronephrosis, and renal calculi."

Influenza.—The London Medical Times and Gazette says: The West-end of London has been visited with severe influenza during the last fortnight. It usually begins quite suddenly with pain in the throat and ears, followed by shivering, *malaise*, constriction of the chest, sneezing and utter prostration. The temperature goes up to 102° the first night, and there is some tendency to lightheadedness.

CLINICAL RECORDS.

"Ex Principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—LESSONS FROM THE MEDICAL CLINIC AT THE "HOSPITAL DE LA CHARITE," GIVEN BY S. JACCOUD, Assistant Professor to the Faculty of Medicine at Paris, Physician to the Hospital St. Louis; Chevalier of the Legion of Honor; Corresponding member of the Royal Academy of Science of Lisbon, and of the Medical Societies of Berlin, Vienna, Wurzburg, etc. Containing 29 Wood-cuts and 11 Chromo-lithographs.

[Translated by Dr. J. D. JACKSON, of Danville, Ky.]

Example of a Complex Lesion of the Heart—Distinction between Souffles by Propagation and Souffles Originating in Place—Signs of Aortic Insufficiency—Diagnosis of Pure Insufficiency and Insufficiency with Narrowing of the Orifice—Signs of Dilatation of the Ascending Aorta.

Graphic Character of the Pulse in the Principal Lesions of the Heart—Effects of Inocclution of the Aorta upon the Intra-cardiac Circulation—Necessity and Mechanism of the Compensation—Secondary Mitral Insufficiency—Symptoms and Treatment of Incomplete Compensation—Symptoms and Treatment of Exaggerated Compensation—Action and Indication of Digitalis—Of Cafeine.

Of Rupture and Compensation in Aortic Insufficiency—Of Sudden Death.

Gentlemen: In No. 22 of our ward St. Anne, is lying a woman whose history is of great interest. This patient has been endowed with an extremely robust constitution, for although sixty-seven years of age, and afflicted for long years with a disease of the heart, she presents in her exterior aspect, no sign of organic deterioration, the vital energy appears entire. And nevertheless, this woman has entered the hospital with a concatenation of symptoms truly grave: violent palpitations. intense dyspnœa, complete œdema of the inferior members, congestion of the liver and lungs, such is the tableau of phenomena which we will demonstrate with her in a short time.

With such an assomblage of symptoms, one could not overlook a disease of the heart of the asystolic period, but a direct examination, can alone reveal the precise seat of lesion, and thus conduct to a rigorous prognosis. We will now see what this teaches us.

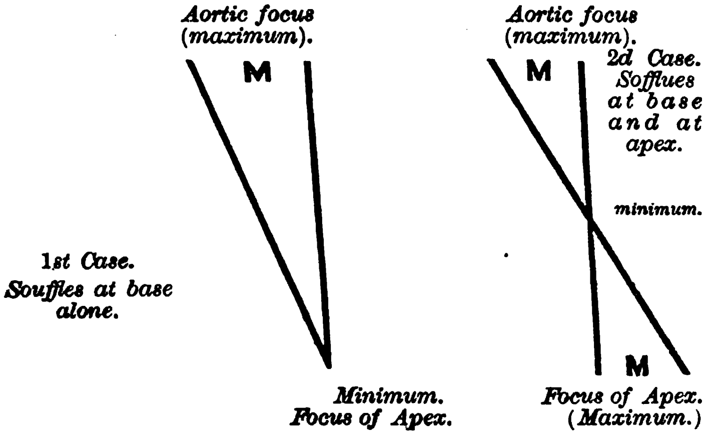
The hand applied over the heart, perceives medium strokes, the extent of which surpasses the normal limits of the præcordial region; it experiences in the meanwhile a sensation precisely analogous to the shock of a heavy and compact body, moving itself out of place *en masse* and with a certain difficulty. There is, however, no vibration at either apex or base. In presence of these results of palpation, you may affirm a considerable hypertrophy of the heart; this percussion directly demonstrates. The superior limit of the base, is scarcely modified, it corresponds to the superior border of the third rib, but the apex lowered and turned aside, beats on a level with the seventh rib, to two fingers breadth outside of the vertical line running through the nipple. The enlargement is still more evident viewed in a transverse aspect, the heart passes beyond the right lateral border of the sternum, so that it touches the mamillary line of this side.

Auscultation reveals throughout the whole region of the base two easily perceived souffles. The one rude, rasping, long, noisy, corresponding to the systole of the heart and occupies also the *petite silence;* the other shorter, mild, not rasping, united to the preceding without interruption, coincides exactly with the diastole. There are here then two distinct souffles, the one in the first time, the other the second; these souffles united together, at the expense of the *petite silence* faithfully represent a double to and fro (*va-et-vicnt*) motion, in which the bruit of advance will be much shorter than that of return. In following with the stethoscope the sternum from base to point, it is apparent that the two souffles or murmurs are indistinct in proportion to the descent; however, the two may be found even at the level of the third piece of the bone; but beneath this point, the souffle of the second time is no longer perceptible, there is heard in its place a second normal tone, but it is very feeble and does not hinder the hearing of the first normal tone of the right ventricle; you ought not to forget that at the base of the xiphoid appendix we are at the focus of auscultation of the right heart.

These two souffles are very clear in all the region of the base, but are not of the same intensity at all points; the seat of maximum intensity is not in any doubt, it is at the most internal portion of the second right intercostal space; in this precise spot, one only hears absolutely the two souffles, but in the homologous points of the left, there is heard with the two murmurs two normal clappings, two bruits of percussion; it being then very evident that the souffles are the strongest on the right side, they occupy then the aortic focus; the two normal clappings perceived on the left at the same time with the murmur, are the two tones of the pulmonary artery.

When we auscult the apex, in applying the stethoscope exactly upon the place where the shock is perceived, there are also heard two *bruits de souffle*, the one at the first, the other at the second time; they are well separated by the *petite silence.* Then, gentlemen, there arises this question which presents itself in all the cases where are heard souffles isochrouous at base and apex of the heart; our two souffles of the apex do they exist by themselves, that is to say, do they originate in place in the left ventricle? Or do they rather result simply from the transmission descending from the very strong souffles of the base? To only consider the relative intensity of the bruits, we would be borne to this last interpretation; but this mode of estimating is too gross, it exposes to error. It may very well be as you can conceive, that a souffle of the apex, although originating in place, may be feebler than a souffle of the base, and judged of thus, the relative force of the bruits proves nothing. A more delicate exploration is indispensable; this is the process which I recommend to you: join by a straight line, with a pen or dermographic crayon, the two foci where you hear the souffles, that is to say in the actual case, the second right intercostal space and the point of the left sixth space where the apex strikes. This done, auscult attentively the superior focus, for the better penetration into your ear of the bruits which they produce; descend then gradually, in following with the stethoscope the line which you have traced: if the souffles of the apex are only the propagation of those of the base, you will hear these to become feebler, little by little, in protions as you depart from the superior focus, and you will thus arrive at the extremity of your line, where you will still find these souffles, but more feeble than at any point of the tract gone over. If, on the contrary, there are really two foci of murmurs, the one at the base the other at the apex, the results of this proof are quite otherwise. In quitting the superior focus, you will establish the progressive diminution of the bruits, up to a point more or less remote, but which generally corresponds to the middle line of the sternum; proceeding from this point the souffles no longer diminish, on the contrary, you hear them increase anew up to the inferior focus, where they are stronger than at any point of the second half of the tract. You have in the first case, a gradually continuing diminution, of such a kind that there is a maximum focus and a minimum focus; you have in the second instance, at first a gradual attenuation, then a progressive augmentation, of such a sort that there are two maximum foci, the one above, the other below; the minimum point is between the two.

The musical notation permits us to figure these two conditions in a very exact manner. To indicate the variable intensity of sound, we may use a V-shaped figure, the opening of which is turned towards the maximum sound and the point towards the sound which is most feeble. The results of comparative auscultation in the two supposed cases can then be thus represented:


Aortic focus (maximum).
M
1st Case. Souffles at base alone.
Minimum. Focus of Apex.
Aortic focus (maximum).
M
2d Case. Sofflues at base and at apex.
minimum.
M
Focus of Apex. (Maximum.)

This appreciation furthermore is as much easier as the heart is larger; the distance which separates the two foci is then more considerable, and the modifications in the force of the bruit become more marked. With a little experience you can simpify this mode in omitting the tracing of the conducting line.

In our patient these are very evidently two maxima foci, and one minimum between the two, towards the middle of the sternum; we are now certain by this also that the souffles of the apex appertain to the left ventricle, that is to say, to the mitral orifice. But beside, to judge of a bruit it is not sufficient to consider alone the force, it is proper to take into account the tonality and timbre. A bruit which is propagated loses its force in proportion, as it recedes from the place of its production, but it preserves up to its complete extinction, its primitive tonality and its timbre; these are the qualities which the enfeeblement coming from distance, can not modify. A bruit at the base propagated to the point is here feeble, but it presents the same diatonic heighth, and the same timbre as the initial bruit. Now in our particular case, this is not what we observe; the souffles of the apex are evidently of a tonality more elevated than those of the base, and their timbre heavier and softer contrasted with the clear and sonorous pitch of the superior souffles.

The study of the murmurs in themselves shows us their respective individuality, and the characters of the pulse will soon furnish us a new proof which would be of itself sufficient.

In possession of these positive contributions, considerable hypertrophy of the heart, souffle of the to and fro kind at the base at the focus of aortic auscultation, two souffles at the apex, normal tones in the right heart, we are already able to come to certain conclusions, and to formulate at least a part of the diagnosis. There is one thing omong others which we can affirm, it is the insufficiency of the aortic orifice, demonstrated by the souffle in the second time at the base. But there is at the same point a souffle in the first time, united to the other in such a manner as to produce a see-saw to and fro bruit, and the interpretation of this physical sign is not without its difficulties; at least it cannot like the preceding be affirmed without discussion.

A souffle in the first time at the base, with the maximum focus that of the bruits of the aorta, is the sign of arterial tension to its minimum, consequent on the reflux at the aortic orifice, the artery sinks, the pulse flees: it is *retrocedent*. As the reflux of the blood in the ventricle is increased when one elevates the superior members into the vertical position, it happens sometimes that in this situation, the bounding of the pulse remaining the same, the retrocession is much more marked; but this phenomenon is far from being constant. You easily comprehend that these characters of the pulse can become enfeebled to the point of disappearance, if there exists with insufficiency a constriction which diminishes all at once the volume of the blood-wave and the power of reflux. The pulse of our patient is perfectly bounding and retroceding. It offers us, then, two of the most important characters of pure insufficiency. It is true that the amplitude of pulse is not proportioned to the bounding of the artery, and that the rhythm of the strokes is very irregular; but these phenomena, totally foreign to aortic insufficiency, will not surprise you, if you will recall that this woman presents a double lesion of the mitral orifice, revealed by the two inferior souffles, the individuality of which you have established. I say, then, that if in such conditions the pulse has preserved the two fundamental characters of aortic insufficiency—the bounding and the brusque retrocession—it is not possible to admit that a stricture of the orifice adds these effects to those of the mitral lesion.

I will show you, presently, the sphygmographic tracings. I do not wish to interrupt this exposition.

Up to now we find in our patient positive signs of a pure insufficiency; and these symptoms, I repeat, acquire a more important value by reason of the co-existence of a mitral lesion. By way of retaliation, a phenomenon fails us which is frequent in isolated insufficiency. This is the arterial beatings, visible at a distance, in the neck and in the members. These pulsations, which become sometimes a cause of painful uneasiness and insomnia, because of the incessant agitation which they impress at the cervical region, and even upon the totality of the cephalic extremity, result entirely from the abnormal volume of the liquid wave, and the excessive impulsion of the heart. The complete absence of these beatings in a case of aortic insufficiency ought to suggest the co-existence of a stricture; but in our patient the aortic orifice is not alone changed. The mitral opening presents alterations which act upon the blood wave in the same manner as an aortic stricture would do, and as the phenomena previously studied have clearly established the fact that the narrowing does not exist at all, it is rational to attribute to the mitral lesions the failure of the characteristic arterial pulsations.

Whilst a profound study of the differential signs of pure aortic insufficiency, and insufficiency with stricture, conducts us into denying the existence of this last in our patient, a positive sign comes in to confirm our conclusion, and demonstrate to us the existence of a dilatation of the ascending aorta. The percussion of the right sterno-clavicular region gives dullness from the sternal insertion of the third rib up to a finger's breadth beneath the sterno-clavicular articulation. The dull zone extends to at least two fingers' breadth outside the right border of the sternum. It is due to the presence of aortic cylinder augmented in volume. I do not think that this dilatation extends itself up to the transverse part of the aortic curve, since I have vainly sought the sign given by Guattani for a case of this kind. According to the Italian physician, when the curve—properly so called—is enlarged, one can, on burying deeply the extremity of the fingers in the jugular fossa, perceive the expanding strokes of the artery. This phenomenon is never clearer than when there exists, along with the dilatation, an insufficiency which exaggerates the pulsations. We have no such thing in the case of our woman; and as I have, in the past, two or three times assured myself of the reality of the sign of Guattani, I conclude from its absence that the dilatation is limited to the ascendant part of the aorta, or at least that the transverse segment takes up but a very small part of it.

As for the two souffles of the apex, the first denotes positively the existence of a mitral insufficiency; and I will soon show you that this lesion is one of the results of aortic insufficiency; the souffles of the second time is the ordinary sign of constriction of the auriculo ventricular orifice. But it can also be due simply to rugosities of the circumference of the orifice and the valvular laminæ, roughenings which, in the moment of the passage of the column of blood, bring about the vibrations productive of the souffle. Of these two alternatives the second seems to me here the most probable. The hypertrophy and dilatation of the left ventricle, an efficacious cause of mitral insufficiency by mechanical enlargement of the orifice, which the valve ought to close, appears to me difficult of reconcilement in this particular case, with a coarctation of this same opening, and on the other side, the pulse presents us an extremely well pronounced irregularity. Now this sign, which is characteristic of mitral inocclusion, is rarely also marked when the insufficiency is complicated with stricture.

In fine, our patient is effected with pure aortic insufficiency, with dilatation and atheromatous degeneration of the ascending aorta, and with mitral insufficiency with rugosities of the orifice and valvular laminæ. The aortic insufficiency is the dominant lesion. It is this which is the first link in the pathological chain. It is this which has produced the dilatation and hypertrophy of the left ventricle, and the consecutive inocclusion of the auriculo-ventricular orifice.

We will pass on to the study of the sphygmographic tracings. We have obtained, with the instrument of Marey, the three drawings which I submit to your inspection. They have been taken at many days' intervals.

FIG. 1. *Aortic and Mitral Insufficiency.*

The first tracing was taken the day of the entrance of the patient into hospital, when the asystolic phenomena were at their height. The pulse did not present a single characteristic appertaining to aortic insufficiency. It is a pulse of the mitral type, with its feebleness, its irregularities, and its intermissions specified. The feebleness is indicated by the slight elevation of the ascensional line, which corresponds to the arterial diastole or cardiac systole. The irregularities are figured in a striking manner by the defect of similarity between the curves which represent the isolated pulsations. Compare this with the pulsations which I have numbered 1, 2, 3, and 4, and you will be fixed upon this point. Finally, the intermissions are represented by a line, horizontal, or almost horizontal, which separates certain pulsations—the one from the other. In the part of the drawing which precedes the pulsation marked 4 the intermission shows itself in both of the two pulsations.

With a sketch so demonstrative of a mitral lesion solely, there was nothing less necessary than the exceptional clearness of the second souffle of the base to cause me to admit likewise an aortic insufficiency.

But a little later the situation was greatly modified. The patient, at two days' intervals, had taken two violently drastic purgatives, to-wit: 30 grammes of *eau de vie allemande*,* and 30 grammes of syrup of buckthorn, in a cup of black coffee; dry cups had been applied in great number, and for many days in succession, at the base of the chest; and in the meantime the extract of quinquina,* and a wine rich in alcohol (the wine of Bagnols†) had been plied with a liberal hand. This treatment—the best you can employ in these pressing cases. where you have not one minute to lose—brings about intestinal evacuations and a considerable diuresis. The œdema of the members undergoes a remarkable diminution. From the third day the dyspnœa was hardly appreciable. Sleep was possible; and the contractions of the heart, as appreciable to the hand, had resumed their force and regularity. The storm was allayed, and we could now of a surety demand of the pulse a revelation of the exact state of the heart. The response was categorical. You will see it expressed in this second tracing:

FIG. 2. *Aortic and Mitral Insufficiency* (*same patient*).

The fullness of the pulsations—or, if you like it better, the height, of the ascensional line was more than triple. The pulse is always irregular, but there is in this irregularity a true harmony, demonstrated by the periodical exactness of the abortive pulsations. Compare the strokes which separate the pulsations numbered 1, 2, and 3, and you will see that the intermediate series are alike at all points. They are composed of one pulsation of long descent, which takes the place of the recent intermissions and two perfectly regular strokes.

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* This German brandy is a strong purgative formed by the maceration in brandy, 58 degs. proof, of jalap root, turpeth root (convolvulus turpeth, a drastic purgative), and aleppo scammony. The dose is from 15 to 30 grammes.—[Translator.

† The wine of Bagnols, one of the strongest of all the French wines, contains, according to Guy Lussac, 17 parts of alcohol in the 100.

† Made by evaporating the alcoholic tincture of Peruvian bark to an extract.—Tr.

This periodical irregularity is characteristic, according to Marey, of senile alteration of the arteries. Finally, whilst in the little pulsations in crochets you translate the influence of mitral lesions, you find, accoupled in the regular pulsations, the not at all doubtful mark of aortic insufficiency. This mark is in the abrupt and vertical character of the ascensional line, in place of the rounded angle and oblique ascension of the normal pulse. These characteristics could not be clearer than they are in the first pulsation which follows the dragging beat. Far from being in disaccord with the results of auscultation, the pulse in this instance fully confirms them. It demonstrates also, along with the souffles, the existence of two lesions.

The third drawing, of some days later, reproduces exactly the preceding, and this constancy of character guarantees the semiological value.

Fig. 3. *Aortic and Mitral Insufficiency (same patient).*

I do not wish to let this occasion pass without presenting you the sphygmographic types of the lesions of the heart. In uniting the tracings which we have collected in the cases of our patients during the current session, I can indicate and demonstrate to you *de visu* the characters of pulse in the principal organic diseases of the heart. This part of the semiology has acquired a mathematical precision, thanks to the labors of Marey, who is its creator in France. As you can derive from my demonstration a knowledge truly useful and positive, I shall take care to bring my types near those which are given by that able physiologist, and to mark the analogies and differences which they present. My conclusions will thus be more certain; and this examination, a little arid, will become really fruitful.

The tracings we are about to analyze present us a complex type: aortic insufficiency and mitral insufficiency, with senile alterations of the arteries. We have there united and modified the one by the other, the sphygmographic characters of this triple lesion of the circulatory system. See, now, a trace of aortic insufficiency almost pure. It is furnished from a man of fifty-two, lying in St. Charles ward, No. 30.

FIG. 4. *Aortic Insufficiency and Slight Constriction of Orifice.*

Four equally important peculiarities characterize this form of pulse, viz: the perfect regularity; fullness of pulsation; vertical character of the ascensional line; the little hook which terminates it. When a sphygmographic drawing presents all these characters well marked, it is pathognomonic. One may affirm that it appertains to an individual affected with aortic insufficiency, pure, or almost pure. The comparative examination of one of the types given by Marey will show you the fidelity of that which I present to you.*

Marey. FIG. 188.

All is alike between these two tracings, to a detail to which I wish to call your attention. In our patient, the crotchet of the summit is not immediately followed by the oblique descending line, it is separated by a little line nearly horizontal, it is that which in sphygmography is called the plateau of the curve. This plateau is a good sign of senile alteration of the arteries, and Marey assigned to it, no other signification; but our patient has not certainly got diseased arteries; on the other hand, the aortic insufficiency, which is with him the dominant lesion, is accompanied by a slight narrowing of the orifice, and it is to this last alteration that I attribute the little plateau, which distinguishes our tracing from that of perfectly pure insufficiency. I hesitate the less in this appreciation, that we find an analogous plateau in a drawing of pure aortic constriction, which I will show you in an instant; it happens in the case of a young man, and senile alteration of the arteries, has nothing whatever to do with it. In addition, although Marey, has not, to my knowledge at least, pointed out the influence of aortic stenosis in the formation of this plateau, he has nevertheless represented it; the two following traces which he gives as an example of insufficiency with aortic constriction leave no doubt upon this point; only the author does not indicate the age of the individuals.

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* I am happy in being able to thank my learned friend Marey, for the obligingness with which he has authorized me to reproduce some of the drawings of his remarkable work upon the circulation of the blood.

Marey. Fig. 191.

Marey. Fig. 193.

Of the four characters which we have assigned to the pulse of pure aortic insufficiency, two are more constant than the others, these are the regularity and the vertical ascension. If the individual is weak, the amplitude of the pulse can never have anything remarkable, and consequently the length of the ascensional line may be very ordinary; in the same conditions the characteristic crotchet may fail, but the two other characteristics—they are fundamental. These peculiarities appear very well upon the following tracing. The patient who furnished it (St. Anne's ward, No. 5,) is a young female of twenty years, affected with pure aortic insufficiency; for seven months, this woman has been struck with a cerebral embolus with right hemiplegia and aphasia. The encephalic lesion is not repaired, and at the moment when we delineate the pulse the patient is in a state of the most marked feebleness.

Fig. 5. *Pure aortic Insufficiency.—Cerebral Softening of seven months date.*

We have seen the pulse typical of aortic insufficiency to be modified by the general conditions of the individual, and by the coincident lesions of the heart, either mitral insufficiency or aortic constriction. The modification is not less remarkable, when the inocclusion of the aorta is complicated with insufficiency of the tricuspid valve. We have had an example of this very rare complication. in a man of forty-four years of age (St. Charles ward, No. 20.). The pulse presents neither fullness, nor the characteristic crotchet; the verticality exists still, only it does not show itself in all the pulsations; its perfect regularity is absent in the drawing, but the irregularity thus created resembles in no respect, the pathognomonic disorder of the mitral pulse. (See figs. 1, 2, 3 and 11.)

FIG. 6. *Aortic and Tricuspid Insufficiency.*

Marey has given two drawings of the radial pulse in tricuspid insufficiency, and despite the differences resulting from the absence of aortic insufficiency as a coincident, it is easy to see between these drawings and the preceding an air of relationship which approximates them.

Here are the figures of Marey.

Marey—Fig. 214.

Marey—Fig. 215.

The most feeble pulsations of our drawing have a curve exceedingly similar to those of figure 214, and the mode of succession of pulsations, ample and small, recalls the rhythm of the figure 215.

Aortic narrowing being especially frequent in old men is ordinarily complicated with senile alteration of the arteries, and the characteristics of the pulse are necessarily complex. But in the following drawing, which is taken from a young man of nineteen years of age (Ward St. Charles No. 14), affected probably with congenital aortic stricture, you will be able to recognize the true pulse of this lesion. In this boy the hypertrophy of the heart is considerable and the impulse energetic; if you take into account this circumstance you will see that the pulse is small, but it is perfectly regular—that which Marey had already well established—and the dicrotism of the descending line is hardly marked.

Fig. 7.—Aortic constriction, probably congenital.

You see at the summit of the curve to the commencement of the descent, a little plateau, which recalls that of figure 4.

When the aortic constriction coincides with a mitral insufficiency, it seems that the first lesion may disappear partially in the irregularity of the pulse proper of the second; one may believe that the arterial stenosis, imposing fixed limits at the expense of the ventricle, not to permit longer, the passage of the blood wave alternately very small or very great; now the variable volume of the wave at each cardiac systole, is one of the causes of the irregularity of the mitral pulse. In a woman of sixty-nine years of age (St. Anne's Ward No. 12) affected with aortic constriction and mitral insufficiency, we have obtained the following tracing.

Fig. 8.—Aortic stenosis; mitral insufficiency; old pericarditis.

The pulse is small but regular, the plateau is clearly drawn and the descending line is literally broken.

The drawings which I have now presented to you appertain especially to the mitral lesions. Marey insists with reason upon the irregularity of pulse from mitral insufficiency; this, according to him, is the pathognomonic characteristic; this irregularity is complete and does not offer the regularly periodical variations of senile alteration of the arteries. The drawings which he gives of this form of pulse furthermore fully justify this assertion. I accept it for my part, but with one reservation, which the observations that I have made impose upon me. When the mitral insufficiency only reveals itself by a souffle in the first time, at the apex, when it produces no disorder in the peripheric circulatory system; in a word, when the asystole is completely at fault, the pulse can be perfectly regular, the smallness and length of the line of descent are the principal characteristics. But howsoever little the artificial equilibrium of the circulation may be broken, to however slight a degree the asystole may appear, the irregularity shows itself with the form assigned to it by the founder of sphygmography in France. These are the drawings I have made reservation of:

Fig. 9.—*Mitral insufficiency without disorders.*

Fig. 10.—*Mitral insufficiency without disorders.*

The first is taken from a young woman of 18 (Ward St. Anne, No. 12) who has been affected from her fifteenth year with an acute articular rheumatism with endocarditis; subject for a long time to palpitations, she has already once had the limbs swollen; but to-day the mitral insufficiency perfectly compensated does not exhibit itself except by a rude souffle in the first time at the apex. There is no anæmic souffle at the base which might complicate and obscure the interpretation. You see the small pulse scarcely dicrotic but scarcely regular. Mark also the drawing of No. 10, furnished by an adult man (Ward St. Charles No. 7) under similar conditions. Here the dicrotism alone has disappeared, whilst in the mitral insufficiency and irregular pulse the very small pulsations preserve a dicrotism well pronounced. The following figure is a complete type of this form of pulse:

Marey—Fig 202.

I have no drawing illustrating pure mitral constriction, but a patient who has for a long time been under charge, permits us to study the pulse of constriction with insufficiency of the orifice of the left auriculo-ventricular orifice. With this man, aged fifty-six (Ward St. Charles No. 6), the double lesion reveals itself by a double *bruit de souffle* at the apex, the aortic orifice being sound. Upon his arrival in hospital the patient was in complete asystole, in a state very alarming, the rhythm of cardiac pulsations was not perceptible, and the pulse scarcely quivering under the finger could not put the sphygmograph in motion; under the influence of an appropriate treatment, of which digitalis in the dose of 1 gramme per day was the principal agent, these accidents amended themselves. At the end of forty-eight hours the pulse had acquired sufficient force to be registered by the instrument, and we obtained the tracing which you will see here:

Fig. 11—*Insufficiency and narrowing of mitral orifice.*

Two days after, when the effect of the digitalis was more pronounced, the pulse was still ample; but the fundamental characters were the same, so that this was the result of the tracing of that day.

Fig. 12 *Insufficiency and constriction of the mitral orifice.* (*same patient.*)

The dominating peculiarity of these two figures, is the irregularity; an irregularity of the same form as that of mitral insufficiency only, with dicrotism of the very small pulsations. Indeed, I at present know no characteristic permitting at first view a distinction between the drawing of pure mitral insufficiency and that of insufficiency with constriction. In a good number of cases, one can be guided by the modification which has been pointed out by Marey; the narrowing tends to suppress the characteristic irregularity of insufficiency; but the preceding fact, and many other analogous ones which I have already observed, do not permit me to believe in the constancy of this effect.

This digression, will I hope, not be without utility; I now return to the patient who was the subject of this lesson, the clinical interest of whose history is not exhausted.

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

Louisville, Ky., April, 1870.

Dear Sir: I have received many communications in regard to the Uterine Supporter (Babcock's) advertised in this Journal, but being an interested party (the advertiser making his instrument known, for a consideration, through the pages of my Journal), I prefer not giving requisite testimony. You have used two of these instruments and will, I know, both from your personal character and professional efficiency, state the whole truth in regard to them. Your statement will enable me to say all that is necessary to those seeking information, and will relieve me of all responsibility. Your letter I desire to use for this purpose, and you will oblige me by giving your own opinions and experience (whatever the nature of these may be) unreservedly.

Very truly, yours, E. S. Gaillard.

Dr. T. L. Painter, Liberty Hill, Tazewell County, Va.

Liberty Hill, Va., July, 13, 1870.

Dr. E. S. Gaillard—My Dear Sir: Your request of my testimony in regard to Babcock's Silver Uterine Supporter has been received some length of time, and would have been answered long since, but I was anxious to give the instruments a fair trial before I wrote you. I can now give the result of my experience. The first instrument produced such favorable results in a case of retroversion of the womb that I was led to try the second in a like case. Case first had been an invalid for three years; not able to sit up or walk without assistance; now walks in the house anywhere, up-stairs, etc., out into her garden, sits in the buggy and rides ten to twenty miles; visits her friends with impunity.

Case second, had been confined *strictly* to her bed for sixteen months; could not sit up long enough to have her bed dressed. She is now walking in and about the house; riding on horseback and in a buggy, without suffering pain.

Both of my patients had the usual distressing symptoms attending this disease, many of which have altogether subsided, and others (I feel safe in saying) will, on the continued use of the instrument. I can, so far as my experience with the instrument goes, highly recommend it to the profession as the one we have always needed for the cure of displacement of the womb.

Very truly, your friend,

T. L. Painter.

COLUMBIA, So. CA., July 2, 1870.

DEAR SIR: Sometime since I received a letter from you in regard to the Journal. Before the receipt of your letter I had taked the liberty, when opportunity presented, or urging the importance of promoting Southern medical literature. Since reading your letter, I have done so specially, and have used my pen for the same purpose. There are some things operating against you, and, as you have placed so much confidence in me, I will take the liberty of telling you what they are, and I hope you will dispose of it, in the same kind spirit in which it is related. In the first place, among the original communications in your Journal, there are but few to which the name of any one of the assistant editors appears. In the next place, the names of these gentlemen are often seen appended to original articles in other medical journals. In the third place, there seems to be no objection to articles written by those not yet prominent in the profession, etc., etc.

Hoping that you will not think strangely of my candour, I am, as ever,

Very respectfully, yours, E. B. T.

LOUISVILLE, July 26th, 1870.

DEAR SIR: I thank you for your letter. I will dispose of it through the pages of the Journal, for the subjects stated by you relate strictly to it. The objections mentioned by you have often caused me serious consideration and sincere regret. I can only say, that when the gentlemen, who are now the associate editors of this Journal, first occupied their present relation, it was understood, that such a position imposed no labor (not strictly voluntary) upon them. It was reasonable, however, for me to infer and to assume, that if these gentlemen (who are all writers) wrote for any medical journal, they would naturally write for that one from whose editor they had received a distinguished compliment; a compliment that was in every instance promptly accepted. Had I not assumed this, there could have been no reason for my offering a compliment of this kind; for, of course, there could be neither sound judgment, nor common sense in my wishing to carry the names of these gentlemen upon the pages of the Journal, as the captain of a ship would carry a figure-head at the front of his vessel. My assumption that these gentlemen, if they wrote for any journal, would naturally write for the one with which they are editorially connected, was, in my judgment, so transparent as never to need explanation. I regret, however, to say, that my assumption has not proved to be correct, and that I have received least aid from those from whom I naturally expected to receive most, while these gentlemen have, at the same time, been writing frequently and fully for journals, with which they are in no manner connected. Their convictions and mine have differed, as you see, very widely, and I can only admit that you and your friends have a natural right to be surprised. While, however, one of these gentlemen has never contributed anything, and several very little, there are others whose names have appeared very often in the original departments. The names here given represent, in the order in which they stand, the relative frequency with which they have appeared: Holloway, Stillé, Eve, Cabell, Joynes, Chisolm, Chew, Hamilton, Van Buren, Chaillé, Pitcher, Dickson, Thomas and Sayre. To me, as to the public, communications from these gentlemen afford much pleasure and instruction, but for reasons that you will of course understand I can not (according to my agreement), request the performance of any labor from them.

(6).

One of the associate editors, Dr. T. S. Bell, (now involuntarily retired) wrote more than any of the associate editors, but, with a spirit original and characteristic, his writings were intended not to aid, but to destroy the work with which he was recently associated; the work which he professed to admire and sustain, and from which he had received the greatest compliment of his life. He stands entombed to-day in the grave which he had prepared for another, and in the Journal which he sought to destroy, there are monumentally entered many epitaphs to his exalted character and characteristic fidelity.

As to your third objection, I admit, of course, that many are contributors who are not experts; but how otherwise are they to become so. One must take to the water before he can swim, and you must grant, that the efforts made public are all respectable, and most of them very commendable. Facts are not less interesting or valuable, because they are narrated in a homely way.

I am, Doctor, with esteem,

Very truly yours,

Dr. E. B. T. E. S. Gaillard.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex Damnatur cum nocens Absolvitur."

Obstetrical Operations, Including Treatment of Hæmorrhage. By **Robert Barnes**, M.D., F.R.C.P., London, England; with addititions, by **Benjamin F. Dawson**, M.D. New York: D. Appleton & Co. 1870.

This is one of the most remarkable works that has been recently published. It is remarkable for the manifestations of one of the greatest gifts which can be bestowed upon a writer: the power of comprehensiveness with conciseness. It is remarkable for its lucidity and simplicity of descriptive. It is remarkable for its individuality and independence. It is remarkable for something, now, particularly rare: the immediate presentation of the subjects involved, without the usual tedious and prolix explanation of the author, as to the many reasons which prompted him to undergo the difficulties and trials of authorship. One can actually commence a study of this work, without having first to learn, from the introductory chapters, a sufficient amount of facts to enable him to play the double rôle of biographer and reader.

The only introduction embodied in this work of Dr. Barnes is an introductory written by the American editor, Dr. B. F. Dawson, of New York. This well known editor deserves much praise for the judicious manner in which he has maintained his editorial relations. Uusally the American editor of a foreign work uses this work as does an expert fisherman the float which he places upon his line. Just as in the last case, the float is necessary to sustain the leaden mass affixed to its end, which, without this buoy, would sink into the foul depths below, so most American editors use a foreign work as a buoy or float to sustain them in the literary ocean. They feel that they are where they can not "touch bottom," and that without this convenient support they would ignominiously and speedily sink into the deep, dread waters of early oblivion. All who have read many foreign works with American editors will, it is believed, feel the justice of these strictures.

Dr. Dawson deserves great credit for having edited his work without subjecting himself to the suspicion so generally attaching to many employed in similar undertakings: the suspicion of using the labors of another for the purposes of self-aggrandisement and individual notoriety. All readers, however, must certainly look with anxiety for the day, when publishers will be content to publish foreign works without change or amendment: just as they received them. Certainly all additions to them are generally like that made by the poor fly alighting on the wheel of the completely finished coach; and the observations usually made on such occasions remind the reader painfully of the ejaculation of this simple insect on the rapidly revolving wheel, "What a dust we do make!"

Dr. Barnes first gives a list of the emergencies requiring medical interference; and in his description furnishes a list of instruments, with a classification so convenient that it is here presented. He calls this collection his "obstetric bag."

To save the child: 1, a lever; 2, a pair of long, double curved forceps; 3, Robertson's apparatus for retained funis.

To reduce bulk of the child: 1, a perforator; 2, a crotchet; 3, a craniotomy forceps; 4, decapitating hook (Ramsbotham's).

To accelerate or induce labor: 1, a blunt-ended straight bistoury, with a cutting edge of three quarters of an inch, to incise the os uteri in cases of extreme contraction or cicatrization; 2, a syringe, with flexible uterine tube nine inches long; 3, a set of "my" caoutchouc hydrostatic uterine dilators; 4, three elastic male bougies (8 or 9); 4, a porcupine quill to rupture the membranes 5, a flexible male catheter; 6, a pair of scissors, with thread.

For the cæsarean section; 1, a bistoury; 2, silk and silver sutures.

Miscellaneous: 1, chloroform, with an inhaler; 2, laudanum; 3, Hoffman's anodyne; 4, ergot of rye; 5, solution of perchloride of iron. An ounce of this, with six ounces of water, is an efficient hæmostatic.

Practitioners in the country can not, of course, carry such a "bag," but it is at least interesting to see what the best authority on this subject regards as necessary or adviseable.

Contrary to American views, the author attaches the highest importance to the vectis. The straight forceps he repudiates. In applying the forceps, he prefers the lateral to the dorsal decubitus. For the induction of premature labor, he passes up an elastic bougie into the uterus. In twenty-four hours he ruptures the membranes, and inserts one of his dilators. By the use of these simple means he claims to have little trouble or delay. He checks hæmorrhage by tamponing the os uteri, and not the vagina; and when the os is dilated, he empties the uterus of its contents. If hæmorrhage does not then cease, he "swobs" the uterus with perchloride of iron. He uses the binder when hæmorrhage is excessive, and attaches great importance to it in general obstetric practice. Accidental hæmorrhage, frank or concealed, is treated thus: the membranes are ruptured, the cervix is dilated by "Barnes'" dilators, and the forceps are then used.

The whole work is handsomely and liberally illustrated. It is published in an unexceptionable manner, and will, beyond doubt, be a favorite authority with American practitioners. E. S. G.

A PRACTICAL TREATISE ON THE DIAGNOSIS, PATHOLOGY AND TREATMENT OF DISEASES OF THE HEART. By AUSTIN FLINT, M.D. Second Edition. Philadelphia: H. C. Lea. 1870.

This work has, since its first publication in 1859, been a favorite among the physicians of this country. It has been in this, its last, issue much enlarged and generally revised. The preface of the first edition in which the author explains carefully his reasons for publishing, is retained.

As the first edition of Dr. Flint's work received general notice at the time of its publication, it is not necessary to review it in detail now; any attention bestowed upon it must necessarily be connected with the additions made to the work, or modifications of the original text. The modification that will chiefly attract attention is the manner in which Dr. Flint disposes of the question of the mechanism of the heart's impulse. In the first edition, in discussing the different views in regard to systolic elongation or systolic contraction of the heart, Dr. Flint enters con amore into the subject and stands forward as an enthusiastic advocate of the systolic elongation of the heart. He is unable to see how any one can suppose that the heart contracts longitudinally at the period of systole. Galen, Vesalius, Harvey, J. Hunter, Dalton, etc., are pleasingly sustained, while Steno, Lancisi, Haller and others who advocate the theory of systolic contraction are of course repudiated. Dr. Flint uses this very positive language in his first edition: "It is difficult to understand how careful observers should be deceived in this regard," and then takes his position and teaches as follows: "The systolic elongation of the heart is therefore assumed in this work, in opposition to the statements of most, if not all, previous writers on the diseases of this organ." So far, so good! Dr. Flint is clear, positive, and fully comprehended; his teachings and views are opposed to those of most writers and teachers, and he in a manly way says so, and takes all responsibility; as every writer should do. How stands Dr. Flint on this practical question to-day? In the edition just issued, on page 48, there is the following footnote: "The consideration of the mechanism of the heart's beat, to which some space was accorded in the first edition of this book, is omitted in this edition. For this the reader is referred to treatises on physiology"—! If, as is requested, physiologies be consulted, what is the result. Dalton's physiology, quoted by Dr. Flint in his first edition, and most others teach, what Dr. Flint then taught; but the physiology of Dr. Austin Flint, Junior, contains details of experiments performed by Chauveau and Faivre, and repeated by Dr. Flint before the medical class, at Bellevue, which demonstrate conclusively that during the period of systole the heart unquestionably contracts longitudinally as well as transversely, and that all teachings as to the elongation of the heart at this period are wholly untenable; that the teachings of Dr. Austin Flint, Senior, in his first edition of the work under review are erroneous.* It is fair to suppose that the demonstrations of Dr. Austin Flint, Jr., on this subject are well known to his father, and if they are not, he is surely acquainted with the recent teachings of Chauveau and Faivre. With this knowledge it would have seemed reasonable that an author should recant erroneous teachings, and particularly when they had been advanced with great positiveness; but this has not been done. While the work was being "thoroughly revised," (as is stated on the title page), this subject could not have escaped attention, and the question naturally must have arisen, shall this error, be acknowledged and corrected, or shall the original teaching remain uncorrected; shall the author's character for correctness suffer by the acknowledgment of error or shall the science ot this portion of the subject be avoided or evaded? It is only necessary to say that the whole subject is evaded, and the wrong impression created by the first edition remains uncorrected. If it is said, that there was not space sufficient, the answer is two fold; first, that an author, if he expects his teachings and authority to be respected, must always make a place for the truth; for the elimination of error; and, secondly, that had the second edition been accorded the same space allotted in the first edition to this subject, it would have required of the author the insertion of not quite two pages, in a volume of 550 pages.

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*The apparent elongation of the heart during its systole is known to be due to the sudden enlargement of the great vessels at the base of the heart, pushing thus the heart forward and causing it to impinge upon the thorax. If the heart be suddenly removed from an animal and held horizontally, or with the point downward, it is palpably and conclusively seen to contract longitudinally.—REVIEWER.

The insertion of this foot note whereby a discussion of the whole subject is avoided, is worthy of the diplomatic tact of a Talleyrand ; but is not what should be expected from a scientific author.

Those portions of the work relating to the pathology of heart diseases and the minute directions conveyed in regard to a correct interpretation of physiological and pathological chest sounds, are worthy of all praise. Indeed the whole work bears evidence of the careful student and accurate writer, and with the exception of occasional pleonasm and ambiguity, the style of the author must be acceptable to the most fastidious. The plate affixed to the volume is a valuable and a most useful guide to a proper interpretation of the text. The publisher has done all that an author or reader could desire in regard to the typograpy, and mechanical details connected with the volume. E. S. G.

I.—THE TREATMENT OF CROUP. By FORDYCE BARKER, M. D., Clinical Professor of Midwifery and Diseases of Children, in Bellevue Hospital Medical College. New York: Townsend & Adams.

II.—TRANSACTIONS OF THE SOUTH CAROLINA MEDICAL ASSOCIATION: 1870. Charleston: Walker & Evans.

III.—TRANSACTIONS OF THE KENTUCKY STATE MEDICAL SOCIETY: 1870. Robert Clarke & Co., Cincinnati.

IV.—CRIMINAL ABORTION, ITS EXTENT AND PREVENTION. By ANDREW NEBINGER, M.D. 1870. Collins, Printer.

V.—MICROSCOPICAL ANATOMY OF THE HUMAN LIVER. By Dr. H. D. SCHMIDT, New Orleans, La. 1870.

VI.—THE MEN WHO ADVERTISE—*An Account of Successful Advertisers—A Complete List of all the Newspapers, Magazines and Journals published in the United States; with their Locality, Titles, Editors, Circulation, Terms, Language in which they are Printed, Etc.* Nelson Chesman for Geo. P. Rowell & Co., New York. 1870. $5.00

I. This monograph was furnished for publication by request of the editors of the American Journal of Obstetrics, ot New York, and it was originally published in that journal. As to the ability of Dr. Barker, it is unnecessary to say anything: it is well known. As to his opportunities for observation, and his immediate personal experience, these are equally fully admitted. The views of such an efficient observer, are, therefore, entitled to more than ordinary attention. After eliminating œdema glottidis and the neurotic phenomena known as laryngismus stridulus from the varieties of croup, as do all teachers of any accuracy at the present day, he accepts as fixed or regular forms of croup, catarrhal laryngitis (or false croup) and pseudo-membranous laryngitis (or true croup), and the croup of diphtheria. While almost all writers will admit two of his classifications—the false and true croup—as manifestations of the disease known by the generic name of croup, it is not believed that more than a very few competent judges will agree with Dr. Barker when he classifies the croupal phenomena of diphtheria as one of the recognized subdivisions of croup. The pathological conditions of diphtheritic and ordinary croup are so widely different that it is impossible to understand how any one is ready or willing to admit them as indicating a similar or single disease. Again, the clinical phenomena are equally contradictory of such an assumption. The physiological constituents of the membrane of croup are widely different from those observed in the membrane of diphtheritic croup. The pathological sequelæ of diphtheritic croup are paralysis, strabismus, amaurosis, etc. The sequelæ of croup are seldom or never seen; and if they occur, they are not neurotic in character. The dissolution of the blood characterizing the pathological condition of the blood in diphtheric croup is never seen in either catarrhal or pseudo-membranous croup. The membrane is renewed as the rule in diphtheritic croup: it is rarely renewed in pseudo-membranous croup; the appearances of this in quantity usually being the precursor of relief. Death from diphtheritic croup is usually from asthenia. In ordinary croup apnœa is usually the cause of death.

Diptheritic croup is a toxæmia, a primary constitutional disease, with local manifestations, while croup, catarrhal or pseudo-membranous, is not a disease of the blood, it being a local disease, with secondary constitutional manifestations. In diphtheritic croup, the membrane is not always present. In pseudo-membranous croup the membrane is, of course, always present. One is an asthenic disease; the other is essentially sthenic. One is contagious; the other is not. One is often epidemic and seldom sporadic; the other is never epidemic and always sporadic. One is not peculiar to any age;

the other is a disease essentially of childhood. There is sometimes a cutaneous eruption in diphtheritic croup; it is not seen in croup proper.

These are some of the many pathological differences that serve to separate diphtheritic croup from the catarrhal or pseudo-membranous disease. The clinical phenomena make the line of demarcation still more broad and well defined. In diphtheritic croup the membrane forms first in the fauces; in croup proper it appears first in the larynx and trachea. There is primary depression always strongly marked in diphtheritic croup; in croup it is secondary and succeeding dyspnœa. Dyspnœa is not a prominent symptom in diphtheritic croup; it is one of the chief symptoms in true croup. Cough in diphtheritic croup is not marked, and when present it is soft and moist; the cough of croup is frequent, and is harsh, sonorous, and metallic. Dyspnœa, when present in diphtheritic croup, is usually uniform, though increased by efforts at deglutition; in croup, dyspnœa is usually spasmodic. In diphtheritic croup the constitutional symptoms precede the local, while in true croup the local symptoms precede the constitutional.

Thus much has been said in r view of this effort of Dr. Barker to include diphtheritic croupal phenomena as one of the subdivisions of the generic disease known as croup, for several reasons. Writers recognized as authorities do not so teach. Such a classification is in opposition to the pathological facts, and to the etiology of the diseases named. It is not reconcileable with the clinical phenomena observed; and lastly, it is a dangerous admission, when, with such an admission, the patient is to be subjected to therapeutical tests. The treatment adopted either for catarrhal or pseudo-membranous croup would almost certainly destroy a patient suffering from *croupal diphtheria*, or what Dr. Barker terms diphtheritic croup. His classification is believed to be in violation of pathological, etiological, and clinical facts, and one leading both patient and physician into extreme danger.

Dr. Barker believes that the profession can not establish at the bedside a clear differential diagnosis between true and false croup, or between catarrhal and pseudomembranous croup. Most physicians—the great majority—have perfect confidence in their ability to do so. He regards the two conditions as differing only in degree. Such is not the belief usually entertained. He thinks the terms true and false croup, as suggesting different pathological structures involved, should be abandoned. Even granting the identity of these conditions ("differing only in degree"), it is unquestionable that true and false croup represent different stages of inflammation, and should receive different kinds of treatment. Any assumable identity would suggest some identity of treatment; and as such a course would be unfortunate, the terms true and false croup, as suggesting a broad difference in treatment, are, if not pathologically correct, still theoretically safe, and had best be retained; at least, until a change can be made which is based upon facts and demonstration, and not upon limited experience and gratuitous assumption.

Dr. Barker has been more fortunate in his treatment of croup than any practitioner known to the reviewer. He has "never lost a case;" with such a record, all physicians will read with pleasure his method of treatment:

> I always commence the treatment by an emetic of turpeth mineral (hydrargyri sulphas flava), in doses of from three to five grains, according to the age of the child, If it does not act in fifteen minutes, I direct a second powder to be given. This, however, is rarely necessary, and I have never known a second dose to fail to act in a few minutes, except in one instance, which I will mention hereafter. My reasons for preferring this to all other emetics in croup are the following: It acts much more promptly and efficiently than ipecac or

alum; it is tasteless, and much more easily administered than either; it does not exhaust and depress the vital powers like antimony. It is equally prompt in its action with the sulphate of copper, while it is much more effective as a revulsive and sedative. I think the active emesis from the turpeth mineral accomplishes the following results much more speedily and effectively than any other agent. It depletes the mucous membrane by an abundant secretion of mucus which is thrown up; it removes from the larynx, by the forced expiration which it causes, any albuminous or fibrinous exudation which may be there in a different state, and which, by remaining, may become subsequently pseudo-membrane; it acts as a powerful revulsive, and thus diminishes the capillary circulation in the trachea and larynx; and thus it becomes a most effective agent in arresting the inflammatory process. I remember that you once asked, some years ago, whether I regarded the mercurial emetic as specially an antiplastic agent. I answer no, except in the indirect way I have mentioned above. I regard it as very important that this emetic should be given immediately on the appearance of the symptoms which threaten croup. It is the only medicine which I have constantly carried in my pocket for twenty-eight years. In all families with young children that I attend, where the slightest tendency to catarrhal laryngitis has been manifested, I have been in the habit of directing that this medicine should be constantly kept where it can be readily found; and I have no doubt that at this moment a hundred families in this city have three-grain powders of the turpeth mineral carefully labelled "croup powders." I think that by this precaution some lives have been saved; and I am very sure that many a bad night I have enjoyed a quiet, undisturbed sleep, when, had it not been for these powders, I should have been routed out. There is one advantage in their use which I must not omit: if the supposed attack of croup is simply one of laryngismus stridulus, or of what is called false or spasmodic croup, the powders do no harm. Of course, after such an attack the physician will be summoned for an early morning visit, when he will discover what sort of disease he is called upon to treat. If it proves to be a case of laryngismus stridulus, I endeavor to find the source of the reflex irritation, and remove the cause. But if I find evidence of catarrhal laryngitis simply, then I rely mainly on opiates, which I regard as almsot a specific for acute catarrh of the respiratory apparatus, whether it occurs in infantile or in adult life. I direct full doses, proportionate to the age of the child, of Tully's powder or the Dover's powder, or the "Brown Mixture" of the United States Dispensatory. But I watch such a child closely, visiting it a second time before evening. But if, on my morning visit, I find the child with a quick pulse, hot skin, somewhat hurried breathing, and an occasional ringing cough, but with no thoracic râles, I direct that he shall be kept quiet in bed, comfortably covered, but not with too many clothes, and I prescribe the veratrum viride, in one or two drop doses, according to the age of the child, as for example in the following formula:

Simple syrup, one ounce; water, six drachms: spirits of nitric ether, two drachms; tincture of veratrum viride, sixteen to thirty drops. M. S.—A teaspoonful every second hour.

I visit the child at least as often as every eighth hour, and increase or diminish the dose, according to the effect of the medicine on the pulse. I am never satisfied until I find the pulse below 80 per minute, and I then continue the veratrum in half the dose that I found necessary to bring it down to that point. My experience in the use of the veratrum viride now dates back more than twenty-five years, and I have never found it fail to reduce the pulse of irritation or of inflammation (it will not reduce the rapid pulse of exhaustion), and I have never found the slightest danger or uncertainty in its use, as I watch its effects closely, If thoracic râles, hurried and labored respiration, and other symptoms indicate that the disease is extending downwards, I then substitute for the above prescription something like the following formula, of course varied according to the special indications of the case:

Mixture of gum arabic and syrup of tolu, of each one ounce; carbonate of ammonia, half a drachm; tincture of veratrum viride, sixteen to thirty drops. M. S.—A teaspoonful every second hour.

It has sometimes occurred that I have found evidence of increasing laryngeal and tracheal obstruction, and I have in consequence repeated the emetic of the turpeth mineral on the second or third day; but I have never had occasion or deemed it well to repeat it a third time. Several times, a few hours after the emetic, but never during its immediate action, the child has thrown off more or less detached portions of membrane. In two instances I have had perfect casts of the trachea, with its bifurcation and some of the primary branches of the bronchi thrown off. One, in 1856, I exhibited before the Obstetric Section of the Academy of Medicine. It occurred in a child thirty months of age, following measles. The other I exhibited before the Medical Class of Bellevue Hospital Medical College, in the winter of 1862. Both of these children recovered; but I was particularly struck with the fact that there was no immediate improvement of the respiration or apparent amelioration of symptoms directly following the throwing off of the membranous casts. I am indebted to you, some ten years ago, for my knowledge of the tolerance and great value of quinine in large doses in some of the diseases of the respiratory organs of children. I have found it of great service in some cases of croup in the advanced stages, when the respiration is hurried and irregular, the paroxysms of cough becoming less marked, the intermissions less distinct, and the cough husky instead of ringing. I have substituted for the last formula the following:

Mixture of gum arabic and syrup of senaga, of each one ounce; sulphate of quinine and carbonate of ammonia, of each half a drachm. M. S.—To be well shaken. A teaspoonful every fourth hour.

When the croup is complicated with lobular pneumonia I usually give the quinine separately, four or five grains three times a day, while the little patient takes the last of the prescriptions containing veratrum viride.

II. The Transactions of this society have already been published in part in this Journal. The meeting was an entire success. The papers read were highly creditable and some of these will be published either by analysis or in full, in this Journal. The papers of Drs. R. A. Kinloch and J. T. Darby are specially valuable as special contributions to surgery, while the address of the President Dr. A. N. Talley is a chaste, ornate and philosophical paper, evincing a care and amount of study as unusual as commendable. The election of Dr. T. T. Robertson, of Winnsborough So. Ca., as President of the Association conferred fully as much honor on that body as it did upon the most worthy recipient of this deserved distinction. The dear preceptor and friend of the reviewer, it is difficult to say whether his personal truth and nobility of character, his admitted professional efficiency and extreme modesty, or his unstained record as a man, most entitle him to the distinction conferred. The Association adjourned after a most useful and harmonious session with every prospect of its record being in future as honorable and distinguished as it has been in the past.

III. This Society met at Bowling Green, in this State. The Transactions contain nothing that has not already been published in this Journal; the speech of the President, excepted. Dr. H. M. Skillman, the retiring President, has published (in this volume) an address which can not fail, if its lessons and injunctions be followed, to produce results highly flattering and honorable to that worthy officer, who deserves great credit for the zeal and fidelty manifested. Two long papers, prepared respectively by Dr. T. S. Bell and Dr. L. P. Yandell, have not appeared as was expected. This misfortune is a source of extreme regret to their friends, and robs the Transactions of that great weight which their embodiment would certainly have secured. The paper on tuberculosis, by Dr. Coleman Rogers, is said to have been able and exhaustive, and it is much to be regretted that it could not have been published. It is to be hoped that the limited treasury, with the poverty-stricken appearance of these Transactions will stimulate the pride of the physicians of this State and induce them to attend the future meetings of this Body. The publishing committee have done exceedingly well, but the Transactions, in material, (not in appearance) are certainly the most unfortunate and lamentable ever issued by any medical Body in America. Unless Kentucky physicians will evince the laudable spirit so generally manifest in other States, of attending the meetings of their State Association, they will rest under the blighting stigma of giving to the profession more of these Transactions which can not but bring the blush of shame and mortification to every physician in this State. It is suggested that nothing will contribute more towards securing a large attendance at the annual meetings, than the referring of all papers, without reading them, to the publishing committee. If they are meritorious, they will be published and all the members of the Society (those absent, as well as those present) can study them at leisure. If they are not meritorious, they will not be published, and the Society will have escaped a serious annoyance. In either event, the most valuable time will be saved. Nothing is regarded (and justly) a greater tribulation, than being compelled to listen to the interminable papers of a few who are the victims of the *cocoethes scribendi.* Nothing more than the dread anticipation of having to undergo this kind of torture, prevents a full attendance of physicians at these anniversary meetings.

The time gained by referring all papers to the publishing committee can be most profitably spent in debating scientific questions and in perfecting the organization of the Society.

It is also suggested that much of success in these meetings depends upon the social and business tact of the reception committee. Local amenities are of course subordinate to the chief objects of these meetings, but the reception of graceful courtesies contributes no little to the pleasure of attending them; all such amenities produce a double pleasure, that of anticipation and also that of memory. Were an attractive programme for the three or four days of attendance published in the Medical Journals and one or two newspapers of the State and the members promised entire safety from the tribulation of listening to endless papers, future meetings could not be like the last; approaching failure so nearly that kindness or courtesy alone prevents the writing of the unwelcome and ungracious word. The officers elected and the committees appointed are excellent. Let there be a great effort to redeem the record of the last meeting. The Covington physicians can make the next meeting a success. Will they do so? The physicians of the State rely upon them.

IV. This is a most excellent and exhaustive paper. It contains a fund of interesting information and instruction. The subject is one worthy of the best efforts of the distinguished writer and of the occasion (his retiring from the Presidential chair of the Philadelphia County Medical Society) and he has fully discharged the trust assumed and satisfied the expectations entertained.

V. This paper is complete in its objects and execution. It has no superior of its kind, and reflects much honor and great credit upon its well-known author.

VI. This is not a professional work, but it is one of such magnitude, (nearly 900 large octavo pages) novelty, importance and interest, that attention is particularly invited to it. It is almost impossible, without an actual inspection, to conceive of the vast amount of energy, administrative and executive talent embodied in it. It is a work of great value, and contains interesting and entirely original information. Here are a few of the innumerable facts, carefully detailed in this volume: "The largest newspaper in the United States is the New York Independent, and it has also the largest advertising patronage of any weekly paper in the country. Its editor is the best paid of any editor of a periodical other than a daily. The largest daily is either the New York Tribune or the New York Journal of Commerce; which, it is difficult to decide. The smallest daily is the Ithaca Leader, at Ithaca, N. Y. The New York Weekly and Bonner's Ledger have each more than three hundred thousand circulation, and exceed any others in the U. States in this respect. Among the newspapers which are printed with news the New York Tribune and Pomeroy's Democrat have the greatest issue—about two hundred thousand each—but, on the contrary, some newspapers in the South do not claim over one hundred and twenty. The average circulation of a weekly country paper in the Western States is about six hundred and fifty; in the South, five hundred and fifty, and in the East about nine hundred. There is a weekly country paper in Rhode Island, however, which has a circulation of over seven thousand. There is one daily in New York which annually receives over eight hundred thousand dollars a year from advertisements, and there are two others which receive over four hundred thousand. The total number of newspapers is 5,319, out of which about 550 are daily. Two hundred and fifty-eight German newspapers are printed in the United States and British Provinces, of which about one-quarter come from Pennsylvania; forty-eight are issued in French, five in Dutch, four in Italian, three in Welsh, two in Bohemian, one in Russian and English, and one in Chinese and English. San Francisco has the greatest proportion of periodicals published in foreign languages, although the aggregate number is in this proportion reversed. New York has six German dailies, two French, and one Scandinavian, besides twenty-three in English. The highest salary paid to an editor in America is ten thousand a year; we would not dare to say how small is the lowest.

For full information on these and other topics we desire to recommend this book. It has, in addition, a Newspaper rate-book, giving the rates of advertising in all the prominent newspapers of America, from which we learn that it costs thirty dollars to insert an advertisement one inch long in a certain New York paper one time; and a number of sketches of men who advertise. Men who advertise and make money by it must of necessity know something, and the story of their lives shows how they gained much knowledge and such experience as to make their powers available. Altogether this volume is useful both for entertainment and for business."

MISCELLANEOUS.

"Non Omnes Eadem Mirantur Ament Que."

Testimony in behalf of the Medical Officers of the Confederate Army, and of the Women of the South. Extract from a Lecture delivered to the Medical Class, by the Editor. —The present opportunity, cannot be lost, of offering a a deserved tribute to the medical officers of the Confederate army, by one who knew them well and intimately, as distributed over an area extending from Mississippi to the Northern boundary of Virginia; that body of men, among whom, as is not generally known, many were killed in the discharge of their duties on the field; many lost limbs, and very many were dangerously or mortally wounded. The first Napoleon honored himself, in honoring his friend and adviser, the celebrated Larrey, whom he made a Baron of the Empire. In most European countries, medical officers have been brëveted for gallantry on the field of battle, and for equal bravery in the deadly wards of the plague hospital. The present noble sovereign of Great Britain has herself decorated many of her medical officers, for their heroism and distinguished services in her armies; while the names of Sir Astley Cooper, of Sir Benjamin Brodie, of Sir James Simpson, of Sir William Fergusson, of Sir Charles Bell, of Sir Henry Halford, Sir James Syme, Sir Braxton Hicks, Sir Henry Thompson, and of many others, show that the British Government equally rewards meritorious deeds performed in the quiet walks of private life. Many of the French medical officers now wear the cross of the Legion of Honor. With a few exceptions, European governments have invested their medical officers with the highest rank, and with the noblest honors. In these armies are to be found medical officers wearing various emblems of rank, from that of the simple lieutenant to that of the major-general. In the United States service, the grades of rank run from that of lieutenant to that of the brigadier. The Confederate service formed the singular exception in this respect. There was in this army (a few officers of the old service excepted) no absolute rank, but, in place of it, that military anomaly "assimilated rank," or a name only, by which disbursing officers were to be governed in the adjustment of monthly pay and post allowances.

Officers in the quartermaster and commissary departments were, as was right, invested with actual rank, but while these officers, far distant in the rear of the armies, were thus honored, the medical staff, which endured, with the soldiers of the line, the trials of the march, the dangers of the battle-field and the horrors of the hospital, were made a singular and strange exception.

This result was due to the individual opinion of that unhappy chieftain, whose great name and historic character, united with the sad memories of classic battle-fields and immolated heroes, form the only heritage of those who are left to glory in the records of such a past and to treasure its sublime story for the wonder and admiration of the future. Is it necessary to mention the name of this great chieftain? All here know that reference is made to Mr. Jefferson Davis. It was one of the peculiarities of this great man to deprive the medical officers of his army of their actual rank, but the future has yet to record the name of the first of these officers who could, now, in regard to him, utter a harsh word or a bitter testimony. Though thus deprived of a right, universally accorded elsewhere, though thus stripped of title, rank and all prospect of promotion, did the medical staff of the Confederate army become less zealous, less efficient or less true?

If patriotism consists in the sacrifice of wealth, comfort, station, home and family in the support of a cause, believed to be just and right, were these men not patriotic? If it be bravery to meet death and danger, while armed, on the battle-field, was it less brave to meet these perils when unarmed? If it be fortitude to endure the terrors of shot and shell, when applause and promotion are part of a soldier's reward, is it less of fortitude to endure the same perils, when the stimulus of returning fire for fire is impracticable and the prospect of promotion is forever destroyed? If promotion was the reward for honestly disbursing millions for the well, was it less due for honestly disbursing millions for the sick? When the smoke of battles was swept away and the heroes of such scenes were by a nation blessed, as in sleep they forgot their triumphs and their trials, were those who passed through similar dangers, and who, far into the dismal night, toiled and wept while relieving the agonies of their mutilated comrades, less entitled to the reward of appreciation and praise? If the medical officers in the

Federal army, furnished with all the appliances necessary for the relief of the sick and wounded, were justly promoted for their efficiency and scientific skill, shall not those, who, with all the difficulties of closed ports and empty chests, always equaled and often excelled them, not have their reward? Is history to say nothing for such men? Those appreciated them most who knew them best. If patriotism and bravery and fortitude and honesty and fidelity and scientific worth constitute the leaves in the laurel crown, then shall these men be adorned with them. They have nobly won this crown, and it can not be withheld from them.

Lastly comes the lesson most welcome and most dear to us all—the lesson taught by the women of the South. Mrs. Elizabeth Barrett Browning has embalmed, in verse, the memory of the Italian countess, who, in her rarest robes and purest diamonds, visited the Italian hospitals, to do homage to the heroism and valor of her wounded and dying countrymen. What is to be said of those, who, discarding their costliest silks and brightest jewels, also visited the hospitals of their country; not to render a passing homage, but to perpetuate this by their pressence and to make it immortal by their acts? We have justly admired the Sisters of Charity for their patient self-denial; their faithful discharge of arduous and revolting duties; for their personal sacrifices and their noble vocation; their record has been regarded as heroic and wonderful; so wonderful that their order has been limited and with difficulty sustained; but at the first booming of the cannon, Sisters of Charity sprang up at every Southern fireside. Reared in luxury and refinement, in delicacy and seclusion, they made a noble sacrifice of their womanly instincts and beautiful antecedents, cheerfully surrendering all to minister to the suffering and wants of their stricken countrymen. Unlike that of the Italian countess, theirs was not a passing tribute; it was the fire of a sublime devotion; a devotion which, kindled at Sumpter, burned brightly even at Appomattox; burned long after that flag, they loved so well, was furled amid gloom and disappointment. Oh, the women of the South! they have always been distinguished for their great purity of personal character; for their exalted virtues and their noble characteristics; but, by their action during this war, they have built up, in the hearts of Southern men, an altar, at which they will be loved and praised and worshipped forever.

| Oh!

The Microscope in Medicine.—The debt which modern medicine, both theoretical and practical, owes to the microscope, can hardly be over-estimated, and yet the value of the instrument for clinical purposes is not so generally appreciated by physicians as it ought to be. Many are too ready to sneer at it as a mere plaything, and to deny that it is of real service in the every-day work of a medical man. To such skeptics we commend the following extracts from a chapter on the microscope in a recent work by Prof. Bennett, of the University of Edinburgh:

"Some years ago I was summoned to see a Dispensary patient laboring under bronchitis, who was spitting florid blood. On examining the sputum with a microscope, I found that the colored blood corpuscles were those of a bird. On my telling her she had mixed a bird's blood with the expectoration, her astonishment was unbounded, and she confessed that she had done so for the purpose of imposition.

"A boy was brought to me with an eruption on the scalp, which was of so indefinite a character that its nature could not be determined. He had lately been elected to occupy a vacancy in one of our educational charitable establishments, and the question to decide was, whether the disease was or was not contagious. On examining the scalp with a microscope, I readily discovered the *Achorion Schoenlenci*, or fungus constituting true favus; and as this has been experimentally proved to be inoculable, I had no hesitation in preventing his admission into the school.

"A child was brought to me said io be affected with worms, because it passed yellow shreds in abundance, which, to the naked eye, closely resembled ascarides. All kinds of vermifuge remedies had been tried in vain. On examining the shreds with a microscope, I found them to consist of the undigested spinal vessels of plants, and they ceased to appear when the vegetable broth used as food was abandoned.

"An individual was supposed to be laboring under dysentery, from the frequent passage of yellowish pulpy masses in the stools, accompanied with tormina and other symptoms. On examining these masses with a microscope, I found them to consist of undigested potato skins. On inquiry, it was found that this person had eaten the skins with the potatoes. On causing them to be removed before dinner, the alarming appearance ceased, and the other symptoms also disappeared.

"An elderly lady conceived herself to be affected with insects continually forming on the skin, which produced incessant itching and tingling. All the hair was removed, and every kind of application was tried without effect. On rubbing the surface, she always saw minute white rolls and black specks, which she regarded as insects in different stages of development. The torment and anxiety this caused for many months, it is scarcely possible to conceive. At length she was laboring under the idea that she was communicating the disease to her husband and daughter, when, at the request of her medical attendant in the west of Scotland, she came to Edinburgh in order that I might investigate and treat it. I had the pleasure of showing this lady, under the microscope, that the white bodies were minute rolls of epidermis, or of the cotton cloth with which she rubbed the skin, and that the black specks were portions of dust or soot. Her hallucination being in this way dissipated, she returned home perfectly well."—*Bost. Jour. Chem.*

On Galvano-Puncture of Nævus.—Dr. J. Duncan states that, having experienced the advantage of electrolysis in aneurism, especially in the cirsoid variety, he was encouraged to hope, from the resemblance between this and nævus, that it would prove equally successful in this affection also. He details six cases, of which the following is selected at random:

Case IV was a nævus of the upper lid, with the skin completely involved. Two operations hardened the subcutaneous portion, which was thereafter largely absorbed. After two months, as it was again increasing, an operation was directed to the cure of the skin, which had not as yet been affected by the electrolysis. Its vitality was destroyed, and a black slough separated almost without suppuration. A cicatrix remained, but did not interfere with the motions of the lid.

There can, he thinks, be no doubt that every nævus is curable by electrolysis, though many forms may be more quickly and conveniently cured by other means. To effect a cure, the electrolytic action must not, as in cirsoid aneurism, be limited to the occlusion of the main affluents, but must pervade the whole nævus, and act directly on almost every little vein. But electrolysis cauterizes the tissues as much as it coagulates the blood; and it is evident, accordingly, that when the skin is much affected, a slough will be produced. The slough is tough and dry, excites little irritation, is singularly slow to separate, and does so without a drop of hæmorrhage, even though part of the nævus remains. It is therefore safe and effectual; but if a cicatrix must be left, there is reason for preferring the ligature as more safe and effectual. The galvanic apparatus is cumbrous, and in most cases the operation requires frequent repetition. On the other hand, he thinks this mode possesses many advantages in sucutaneous nævi beyond the reach of knife and ligature; and he gives an instance of one where the nævus so occupied the hand of a child (a year old) that the fingers protruded from the mass like small roots from a turnip. In this a very successful result was obtained by galvano-puncture, a few hard nodules alone ultimately occupying the palm, and the motions of the hand remaining perfect. Again, those on the cheek and neck are well adapted for it. Granting patience on the part of the patient and surgeon, he thinks in such cases it is superior to injection, ligature, or excision. He uses Bunsen's battery, and has no fear of the development of gas, or of its entrance into the circulation to any serious extent.—*Edinburgh Medical Journal.*

Amputation under Chloral.—M. Noir relates this case more as a warning than as an example for imitation, although he suggests that some of the symptoms which arose might have been due to the idiosyncrasy of the patient. The man, 64 years ef age, was an inmate of the hospital at Brionde on account of osteosarcoma of the tibia, which caused him such excessive pain that he eagerly sought for amputation. With the view of allaying his suffering, four grammes of solid hydrate of chloral were given him, which at first induced great agitation and much nausea, then gave rise to such deep sleep and great subsequent relief, that it was determined to employ this substance as an anæsthetic next day during the operation. Accordingly five grammes were given, and in about two hours so deep a sleep followed that he was carried to the table and amputation performed without his making a movement or uttering a cry. Replaced in bed, still asleep, his body was observed to be very cold, and his pulse, which had been 120, became filiform and uncountable. He continued in a state of alarming coma until eleven and a half hours after the chloral had been administered. He then woke up in violent delirium, with vomiting and pain in the stomach. These symptoms continued for nearly eight hours, when they disappeared, leaving the patient in the extremest prostration. He was conscious, but could scarcely move or speak, and was ignorant of all that had passed. After some hours and a good night, though without sleep, all bad effects passed off.—*Gaz. des Hopitaux.*

MEDICAL NEWS.

"Nulla Dies, Sine Linea."

Dr. Charles A. Pope, of St. Louis, Mo., a distinguished surgeon and formerly President of the American Medical Association, committed suicide in Paris, during the present month.——Foreign exchanges announce the death recently of Sir James Syme, of Edinburgh, Scotland; one of the most practical and distinguished surgeons of the present century.——Sir James Clark, of London, physician to the Queen, has also just passed away full of honors and in the enjoyment of the respect and esteem of all who knew him. Since the first of May, the medical ranks have been sadly smitten; Sir Jas. Simpson, Sir Jas. Syme, Sir Jas. Clark, Prof. Charles A. Pope, with many others deeply honored and loved. Among these not one stands more highly than Dr. L. Powell, of Louisville, Ky. This gentleman, after having suffered great agony for many months with cancerous disease of the stomach, has been mercifully released from his troubles. There is a great gap created in the medical circles of this city by his death; a distinguished physician, an able teacher, a beloved practitioner, a true friend, a thorough gentleman, and, above all, a true and humble christian. Death has been indeed busy and has robbed the medical temple of many of its brightest, most valued and purest jewels.——Dr. E. S. Crosier, formerly associate to the professor of chemistry at the Medical University at Ann Arbor, Michigan, and well known in scientific circles in that city, has been elected Professor of Chemistry and Toxicology in the Louisville Medical College.———Dr. W. Y. Gadberry, of Yazoo City, Mississippi, has been elected to the Chair of Principles and Practice of Surgery and Clinical Surgery, in the same Institution. Dr. Gadberry is one of the most distinguished physicians of Mississippi, having filled there the highest positions of honor and trust in the gift of the medical profession.——The following gentlemen have been elected officers of the Medico-Chirurgical Society of Louisville, Ky.: Dr. L. J. Frazee, President; Dr. S. P. Breckinridge, Vice President; Dr. W. D. Morton, Secretary, and Dr. T. P. Satterwhite, Treasurer. With such excellent officers the Society must accomplish much good.———Prof. Hyrtle states that whenever one is "left-handed," it will be found that in such a person the left subclavian artery is given off before the right.————Professor Helmholtz has left Heidelberg and accepted a Chair in the University of Berlin.———Rokitansky has been elected President of the Imperial Academy of Vienna.

EDITORIAL.

"Nullius Addictus Jurare in Verba Magistri."—Hor.

CONTRACTS.—There is, perhaps, no act which for a half century has been more offensive to the aggregate mind of the medical profession, than the making of a contract by a physician in attending professional cases. The act has deservedly met with universal condemnation. The reason for such judgment has been simple. The making of a contract necessarily involves the attendance upon cases at prices below those arranged by the physicians of the neighborhood; it is, in plain language, the underbidding of all contiguous physicians, by the physician becoming a party to the contract; taking thus an unfair advantage of all physicians practicing with higher principles of action; making pecuniary temptation or pecuniary profit, rather than fair dealing and scientific proficiency the basis of competition; reducing the value of scientific labor, and tending to degrade the popular as well as professional estimate of the educated physician. In addition to these reasons, the medical profession has repudiated the contract system, for others, which, though comparatively minor in character, are nevertheless in the aggregate worthy of the most serious consideration. The physician when under contract has, however delicate may be his sense of honor, a constant temptation to neglect the patients whom he is thus attending, for those who remunerate him for each visit; he attends his "contract" patients with less interest and promptitude. Again, the employer, who is a party to the contract, is sensitive of his own interests and harrasses the physician, by sending for him (by demanding labor for which he has paid or is to pay) when there is no actual necessity for his doing so; painfully harrassing thus the medical attendant, if he attends to each call thus made upon him, or, if he refuses to attend, subjecting him to the unworthy suspicion of neglecting patients, for whose attendance he is paid by the season and not by the individual visit. These, with other considerations, not so necessary te mention, have induced the profession to repudiate the whole "contract system;" to legislate in regard to it, and to censure all who resort to it. • Such a record was very proper, and such action has been very natural and commendable.

Recognising, however, the indisputable fact, that circumstances are the parents as well as the modifiers of all proper laws, and that modified circumstances should often abrogate and often modify laws, it is well worthy of of the most serious consideration of the best men in the profession, to determine whether or not the late war has or has not so changed the circumstances having a direct relation to the contract system, as to modify or abrogate the views which have been and are now by many entertained in regard to it.

While the system of slavery existed, every owner of slaves was, both bv State and moral law, held responsible for their safe maintenance and protection during the periods of both sickness and health. Planters and farmers employed physicians to attend their slaves, just as they employed physicians to attend their own families; the same medical attendant was usually selected. Kindness actuated some owners; justice some; and sordid calculation others. The slave-was, however, fully protected when sick, and enjoyed always the very best medical advice. The gain or profit from the healthy laborers abundantly enabled the slave owner to employ able medical counsel for those that were sick or disabled. Under such circumstances, such practice was open to fair competition; it differed in no respect from the practice in the best families in the land. To contract for such practice was unworthy of any physician. Such an act entailed also upon his brethren, remote and proximate, all of the evils heretofore specified.

Have not all the circumstances surrounding the negro entirely changed since he passed from the condition of slavery to that of freedom? Improvident by nature, illiterate, morally and mentally untrained to habits of prudent action and mature reflection, the gains of the freedmen are dissipated almost as soon as they are realized. Certainly, a prolonged attack of sickness would, even under the most ruinously insufficient charges on the part of the physician, bankrupt the most prudent freedman, who, differing from his class, engages in consecutive and persistent labor. Such sickness, or repeated minor attacks of sickness in his family, would make him actually (as he is now) dependent upon the charity or philanthropy of his physician. If this be the case among the most prudent freedmen, what would be the facts in regard to the indiscreet, the prodigal, the inert, and the worthless, forming, as these do, by far, the great majority? The actual facts are well known: they can not afford to employ a physician, and they do not. Sickness and death are rapidly doing their work. If some of these do send for a medical attendant, it would, as a rule, be as wise to look for a rose upon a thistlebush as to expect one iota of remuneration.

Have not the circumstances, then, surrounding the slave vastly—inexpressibly—changed? And if the circumstances giving birth to laws, and modifying those already framed, have so vastly changed, shall the laws, the results of such circumstances, remain unchanged; remain as a dangerous commentary upon the sound judgment and common sense of those responsible for them? Or shall not those responsible for the laws upon this subject recognize the fact of this immeasurable change of all circumstances giving origin to present laws, and so modify these laws, as to have them adapted to the change of circumstances which is so palpable and undeniable? Because medical societies and medical organizations, formal and informal, created certain laws as the result of certain circumstances, shall these laws exist, when the circumstances which gave rise to them have passed away? Shall they remain as laws, simply because they were made laws? Or shall medical bodies, formal and informal, do as other legislative bodies have always done: abrogate their laws, or so modify them, as to make them fairly reconcileable with a change of circumstances, palpable, confessed, and undeniable? The only reply is so unavoidable that it is assumed. As well cling to a corpse, after the circumstances which gave the body vitality and power have changed, as to cling to a law after the circumstances which originated and sustained it have all passed away. Again: charity and philanthropy demand some action from medical men in this connection. The freedman can not be allowed to remain without attendance in his sickness and distress, and none but the medical man can legislate for this evil so as to remedy and remove it. Again: there are hosts of honorable, high-toned physicians throughout the old slave region, who, once in lucrative practice, are now in extreme distress, because they will not infringe upon the law forbidding the making of contracts. Again: the refusal to make contracts for such attendance does not place this attendance, *with profit*, in the hands of medical brethren. A refusal to make such contracts does not, therefore, benefit other physicians, for they can not derive the remotest profit from this work, even though it be left open to free and open competition. As it presents itself to-day, no physician desires this work. Can it, however, be made profitable to the physician, and can the freedmen be placed in the enjoyment of the best medical attendance, on terms which can be placed within their restricted means? By a very little and simple management, this can unquestionably be done.

By universal consent, it has been the custom for physicians to attend the inmates of jails, asylums, penitentiaries, public institutions, factories and manufactories, by contract or for a fixed salary. In what respect does the service rendered for a fixed rate to the inmates of penitentiaries, factories, and manufactories differ from that which would now be rendered for a fixed rate (by contract) to a community of freedmen working together on a farm, or in any of the many ways that might easily be named? Every candid mind must admit that there is no difference. Surrendering, however, this advantage in the argument, admitting that there be no analogy in the cases mentioned, why should not such a mode of practice be adopted, if it be evident, as is admitted, that such practice would injure no one, would be a source of actual safety to the freedman, and would be a source of fair remuneration to the physician? There can be but one argument— or pretext, rather—urged against this mode of practice, and this is, that it is against recognized custom, usage, and rule. What is the value of such a pretext or reason? If there be a pitiable spectacle in the world, it is that of a man, or a set of men, refusing to do what is admitted to be right, because such a course is against usage and custom: of men clinging to results, without analyzing their causes. It is the spectacle of men, who, while gazing at the magnificent panorama of present and prospective history unfolded before them, can find comfort and support only in dwelling upon the past. Such men originate nothing; are without the power of adaptability; are slaves to precedents and the past. History to them affords only chapters of facts without deductions. They can quote the grandeur and glory of Spain, but do not recollect that the present blind adhesion of the Spaniards to customs and habits which once brought them grandeur and glory, make them now, under the change of circumstances surrounding them, a byword and jest among nations!

If it is right and honorable and beneficial to attend the freedmen by contract to-day, while it was not so ten years ago, let the lesson of the past be prized, but let the present and the future have also their lessons, which, measured by sound judgment and common sense, shall be prized also, and, if necessary, defended. While the old custom of attending upon those whose condition and relations have not been changed by the war should remain unchanged; *i. e.*, while practice in the families of those who can remunerate physicians should continue to be the field for open competition, let physicians contract promptly and generally for attendance upon those who can not remunerate them, but who should nevertheless not be deprived of the best medical care and attendance.

Where such persons, *white or black*, are at work, it is evident that a small monthly instalment of their wages retained by their employer would enable him to guarantee the physician abundant remuneration. All workmen when the great advantages of such a course are explained to them would most gladly adopt it. The amount of this instalment must, of course, depend upon the general healthiness or sickliness of each county. On most plantations at the South, where one hundred workmen are employed, thirty cents a month from each would enable the employer to give them the best medical service. Of course, there would be a large number not needing a physician, but whenever any one suffered, and suffering may come to all, such an arrangement would secure the constant services of a skilled and scientific physician. Each section can elaborate the details peculiar to it, but the principle is herein clearly demonstrated; and it is hoped and believed that it has been shown to be principle indeed; that it is true and right; necessary and just.

Such are the mature and deliberate convictions of the writer, and these convictions he hopes to see very soon supported practically and carried out practically by the best physicians of the land. As soon as this is done, the distress of the freedman in not obtaining the best medical advice when sick, or his distress in receiving such advice only as an endless charity will pass away. The present untold, inexpressible poverty of the best physicians throughout the Southern country will pass away, and the good old times of peace and plenty will return to gladden the hearts of those who are workers now, and to encourage with hope those who are preparing for the work of the future. E. S. G.

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ORIGINAL COMMUNICATIONS.

"Qui Docet Discit."

ART. I.—OHIO STATE MEDICAL SOCIETY.—VACCINAL SYPHILIS. Part of a Report on Vaccination. By WM. B. DAVIS, M.D., of Cincinnati.

Over seventy years have elapsed since the introduction of vaccination by Jenner. The majority of the population of the civilized world have been vaccinated. If the vaccine lymph will convey constitutional disease, other than vaccinia, its wide-spread use during these seventy years, will show a large increase of constitutional affections.

A careful examination of the record for this period does not show that there has been such an increase. On the contrary, statistics, according to Farr, Greenhow, and others, prove that scrofula and other constitutional diseases have diminished, and that the average duration of life has been extended, since the introduction of vaccination.

The British and Foreign Medico-Chirurgical Review, for January, 1869, makes the following statement, page 126: "It can not be disputed that the average tenure of life has been lengthened by vaccination, and that a most horrible and disgusting disease (which, where it did not kill, often rendered its victim blind or deaf, and generally hideous for the remainder of life), has been well-nigh exterminated."

Niemeyer, of the University of Tubingen, in his recent work on Practical Medicine, says, on page 553, vol. II: "All objections to vaccination, even if well founded, would have to give way to the facts proved by statistics, that in the last century one-tenth of the population died of small-pox (about 400,000 people dying of the disease every year in Europe), another one-tenth were disfigured by the disease; and that since the introduction of vaccination, the general mortality is less, and that of small-pox is reduced to a minimum."

There are certain cutaneous eruptions which follow the operation of vaccination, just as they may follow teething, or any other slight constitutional disturbance. Mr. Padget pointed out this fact twelve years since, when he wrote that "multitudes of children are naturally predisposed to the commoner eruptions, and that vaccination is only one of many trifling constitutional irritations, which might have precipitated the first appearance of such eruptive diseases." And more recently Niemeyer, in his Practical Medicine, says: "We know that blisters and other irritants to the skin, not only induce inflammation at the point of application, but also increase the predisposition to other cutaneous affections. Many children who have never previously suffered from any exanthema, are affected for months with moist eczema of the face, after having their ears pierced, as well as after vaccinnation."

Vaccine lymph, when long exposed to air and moisture, will undergo the same putrefactive changes that any other animal matter does when similarly exposed; and if inserted in the arm of a subject, will produce the same effects that any other other putrid matter will produce.

When erysipelas or pyæmia follow the use of decomposed lymph, the vaccine is not at fault, but the vaccinator, who has been criminally careless, or criminally ignorant.

The advocates of transmission, however, do not press these minor points, and seem, indeed, to have abandoned their claim for the transmission of all constitutional diseases but that of syphilis. Upon this one disease they rally their full strength. I shall, therefore, now invite your attention to the consideration of the possibility of engrafting syphilis by means of Jennerian vaccination.

It is a fact worthy of notice, that a large majority of all the reported cases of vaccinal syphilis, have occurred in France and Italy. In England, where vaccination is more systematically pursued, and where the official inspection, to which it is subjected, would render the escape of any abnormal development impossible, there are but a very few cases reported.

Whether or not, syphilis, independent of vaccination, is more prevalent in France and Italy than other countries, is a consideration of some moment in its bearings on this question. An affirmative answer might suggest a satisfactory solution of vaccinal-syphilis, so far as these two countries are concerned, without implicating the vaccine lymph.

According to Padget, the transmission of syphilis by means of vaccination, is opposed by pathological considerations. Such pathologists as Rokitansky, Skoda and Hebra, maintain that the insertion of a matter containing the virus of two different contagious affections, is followed by the production of but one disease. That is, if the matter used be a mixture of syphilitic and vaccine virus, either distinct syphilis or distinct vaccinia is the result; not both of them.

It is opposed by direct experiment. Lymph intentionally taken from vaccine vesicles on syphilitic subjects, produced only vaccination.

M. Delzenne recently reported in the Imperial Academy of Medicine, Paris, that in 1865 he had inocculated himself twice with vaccine from syphilitic subjects, and the result was negative. In September, 1866, he vaccinated a syphilitic patient, 21 years old, "who had numerous ulcerated, hypertrophied papules in vulva and perineum, a general papular eruption over body and mucous patches in mouth and throat." On the eighth day he vaccinated himself in four places with the virus from this patient, and the result was negative. He also, at the same time vaccinated seven females (free from syphilis) with the same lymph. The effect, so far as syphilis was concerned, was entirely negative—four responded perfectly to the vaccine.

M. Bourguel reported twenty cases whom he had vaccinated with lymph from the arms of two syphilitic subjects, and the result was negative for syphilis. M. Guerin reported fifty-five experiments combining all the characteristics of scientific experiment, which responded negatively to the artificial production of vaccinal syphilis.

These confirm the experiments previously made by Cullerier, Taupin, Heim, and others.

If, however, the matter from a chancre be accidentally or intentionally inserted in the arm of a patient, it will produce syphilis, but the lymph from a vaccine vesicle on the arm of a syphilitic subject, will only produce vaccinia, just as the lymph from a vaccine vesicle on a patient who is broken out with the small-pox (the vaccination having been performed too late for protection), will only produce vaccination, while the pustules by its side will produce small-pox.

It is opposed by the experience of the greatest vaccinators and syphilographers. West, with an experience of

26,000 vaccinations; Marson, with 40,000; Sir W. Jenner, with 13,000; Seaton, with 50,000; Tomkins, 50,000; Perkins, with 40,000; Loines, with 200,000; Clendenin, with 16,000, and many others who might be named, have never met with a case of vaccinal syphilis.

The following question was addressed by Mr. Simon, in 1856, to the most distinguished medical gentlemen of Germany, France and Great Britain: "Have you any reason to believe or suspect that lymph from a true Jennerian vesicle has ever been a vehicle of syphilitic, scrofulous, or other constitutional infection to the vaccinated person?" Near six hundred replies were received, and they were almost unanimously in the negative. Among whom were Padget, West, Marson, Tomkins, Acton, Lee, Parker, Chomel, Bright, Watson and Brodie.

A large proportion of the reported cases of vaccinal syphilis rests upon insufficient or defective evidence, and the remainder may be reasonably accounted for, without compromising the vaccine, on the grounds (1) of the influence of prevailing diseases; (2) a cachectic diathesis, and (3) latent constitutional syphilis.

Vaccinal-syphilis had but few advocates, either in or out of the profession, until the so-called epidemics of "Rivalta," in 1861, and subsequently of "Auray" (provinces of Italy and France) made their appearance. These epidemics aroused the attention of the profession, and led to a thorough investigation of the causes which produced them.

Concerning the "Rivalta" cases, Ricord says: "For our part, an attentive perusal of the documents of the case, has led us to the same conclusion as Dr. Abertetti, who exonerates from all blame the vaccination in question." With reference to the Auray epidemic, Dr. Anstie, in the Practitioner of November, 1869, says: "Upon the whole evidence we say, decidedly, that it is not proved that the epidemic of Auray was an epidemic of syphilis at all, far less that it was an epidemic of vaccine-syphilis."

Dr. Seaton calls attention in his Handbook to the fact, that long before vaccination was heard ot, Astruc recorded epidemics of syphilis, which were to the full as disastrous and as unaccountable as that of Rivalta.

In the recent discussion in the French Academy, M. Depaul, Director of Vaccination, reported a large number of cases of vaccinal syphilis, as having occurred in the arondissements of Dorient and Vannes.

M. Fouquet stated that there were other vaccinations in those districts with accidents analogous to those reported by M. Depaul, viz: highly inflamed pustules, large deep ulcerations, abundant eruptions, etc., but that these accidents had not an impure origin, and presented nothing suspicious, although the characters noted by him had the greatest analogy with those reported syphilitic by M. Depaul. M. Guerin asserted that the explanation of these cases of M. Depaul, was to be found in a general crysipelatous diathesis prevailing in these departments. He called attention to the fact that any local irritation would develop a latent constitutional taint, and said that *vaccination would not be a port of entry for syphilis, but a means of exit.* In support of the assertion, that prevailing diseases modify vaccinations and produce suspicious sores, he referred to the work of M. Lalagade, Director of Vaccinations of Tarn. On May 25th he vaccinated 95 children with lymph from a healthy child. On June 6th a number of them were found in a sad condition, "the skin was of a deep red, with erysipelatous aspect, vaccinal pustules very large and grayish white, black crusts all over the body, except the soles of the feet, and on the genital organs; one was covered with red patches, similar to measles, another had, the day after the vaccination, large bullæ filled with serum." There was, also, an epedemic of pemphigus complicating the inoculations. On inquiry into the public health in the neighborhood, he found erysipelas, diphtheritic anginæ, malignant pustule, wounds with sanious bases, and numerous cases of pemphigus. On April 10, 1869, he adds: "I am happy to say that to-day none of the children who were vaccinated May 25th, 1868, bear even a doubtful trace of syphilitic disease, and that none of them had undergone specific treatment.

M. Guerin concludes, on this point, by observing:

1. That vaccinal syphilis, up to this time, fails in the majority of points which would support a belief in such an origin.

2. That experiments instituted to determine the possible inocculation, of vaccinal syphilis, are quite contrary to the doctrine of syphilitic vaccination.

3. That among a large number of alleged facts of vaccinal syphilis, most, if not all, belong evidently to another order of pathological influences.

And further along in the discussion, he asserts, that the causes which are likely to vitiate vaccine and give it the false appearance of syphilis, are of a nature to exercise their influence equally upon human and animal vaccine. These causes, foreign to the vaccinine, are either exterior to the subject vaccinated, or inherent in his constitutional state—both more or less susceptible of being determined, prevented, or combatted.

I recently addressed a letter to Dr. J. K. Barnes, Surgeon General U. S. Army, asking him if there was any evidence on file in his office which reported the existence of any vaccinal syphilis among the 2,000,000 of soldiers who took part in the late American war. In reply, he very kindly wrote: "That quite a number of papers are on file in this office bearing on the subject of foul ulcers following vaccination, and supposed by some to be due to the contamination of the matter employed with syphilitic virus. I have made a preliminary examination of these papers and have arrived at the conclusion that their general tenor is directly opposed to this supposition."

Prof. Joseph Jones, of New Orleans, has published a paper on "Spurious Vaccination," based on materials furnished by the Confederate Army. His conclusions agree with those of the Surgeon General, in exonerating the vaccine from blame, and referring the foul ulcers which attended vaccination in the army, to the fatigue, exposure, uncleanliness, insufficient and improper diet, etc., incident to a soldier's life, which resulted in a cachectic diathesis.

Wm. Clendenin, M.D., Medical Director of Hospitals, U. S. A., at Nashville, during the late war, and at the present time Health Officer of Cincinnati, has furnished me a report of his views on vaccination· His experience and opportunities for personal inspection of the ulcers, and so-called cases of vaccinal syphilis, which followed vaccination in the U. S. Army, were so great, that his views concerning them will be of value. His conclusions fully accord with those above expressed.

In reply to my inquiry, Dr. Seaton in his letter of April 9th, writes: "I am not aware of any fresh cases of alleged introduction of syphilis by vaccination with humanized lymph, since I published my book, but curiously enough there has been discussion lately in France on some cases of syphilis in children who had been vaccinated with animal lymph. Of course, the syphilis was a latent syphilis, and the vaccination could have nothing to do with it, except, perhaps, to hasten its evolution; but the cases are instructive, and point, in my opinion, to the explanation of all the alleged cases of vaccino-syphilitic inocculation with humanized lymph, except those in which there was downright carelessness and mixture or substitution of viruses."

This opinion of Dr. Seaton is supported by M. Guerin's terse assertion in the Academy, that "Vaccination is not a port of entry for syphilis, but a means of exit;" and by the Medico-Chirurgical Review, January, 1869, which says, "it is not vaccination, but the parentage which is at fault."

I will close this section of my report by quoting the declaration of Dr. Anstie, in the Practitioner, of November, 1869: "*Vaccinal syphilis is a bug-bear and a phantom.*"

ART. II.—TRANSMUTATION OF A CASE OF MALARIAL FEVER INTO CEREBRO-SPINAL MENINGITIS. By V. E. KIRSH, M.D., Relf's Bluff, Arkansas.

I regret to say, not having seen the patient until late in his illness, I am unable to give his history, except as related to me before I took charge of it.

James E. Boyd, a youth of fifteen years, occupation laborer; he has been subject to malarial fevers during the Spring and Summer months for several years past; however, not this year previous to May 19th; after returning from his accustomed work, with other boys, bathed in a creek near by; next day experienced considerable pain in the forehead, and on the day thereafter had a severe chill, violent head-ache, delirium and spasmodic contraction of the muscles of the neck. It being somewhat inconvenient to send for a physician, his employer took that duty upon himself, gave purgatives and quinine; however, the boy remaining in this condition till May 20th, my friend, Dr. G., was called to see him; treatment adopted was blood from the temple, a blister to the back of the head and neck and an active cathartic. On the 21st his senses returned for the first time since his attack, and within a few days, he appeared to be convalescing, when the mother, contrary to the will of the physician, had him removed to her residence, some eight miles distant; and here I first saw him.

June 14th. Is greatly reduced in flesh and very weak; eyes dull, vacant and wandering; skin dry; tongue white and clammy; pulse frequent; bowels inactive. He converses rationally; when asked, said he felt well except his weakness and a slight pain in the head. The muscles of the posterior part of the neck were contracted in a most rigid manner; head drawn backward. Has been having a chill every third day since he left Dr. G., till a few days before I saw him, the chill changed into a well *marked convulsion*, followed by a slight fever. Plan of treatment pursued was supportive and laxative, with large doses of sulph. quinine, in view of its anti-periodic effect as well as antidotal influence on the masmatic poison. Pulse at this time being 88 and respiration 18 per minute.

June 16th. Still complains of pain in the head; hearing more difficult; cannot rest well at night. Is *very weak;* has fever all the while, *especially tn the head.* It being impossible to obtain ice in this country, I shaved the entire scalp and applied a blister.

June 18th. Rested well last night and says he feels much better.

June 20th. Saw him again this morning; lies on his back, inclined to the right; right leg extended and left semi-flexed; bathed in perspiration; skin cold; muscles of the left half of the body relaxed and paralysed. Two degrees difference in the temperature of this side, being lower as compared with the right; pulse at left wrist imperceptible; pupil of left eye dilated, of the right greatly contracted; mouth drawn downwards and to the right; tongue drawn to the right but upwards; respiration quick and short, 50 per minute. I remained with him sometime, while in this condition, his respiration gradually becoming slower until death, at 11½ P. M. No post mortem permitted.

In this case, doubtless, the disease of the meninges of the brain was brought on by so long allowing that important vital organ to remain compressed by congestion; that the patient remained from the 14th until the 20th of May, six days, delirious from mere pressure on the brain. This is the second case of the same nature, symptoms precisely similar in both instances, that has occurred within the last two months in my immediate neighborhood, and other cases of less note, though like origin, are daily brought under view of the physicians of the Southern States.

ART. III.—CONGENITAL GANGRENE. By J. R. BRATTON, M.D., Yorkville, S. C.

Regarding the following case as a most novel and interesting one, showing the influence of the mind of the mother upon the fœtus in utero, I offer it to you with the view to elicit an expression of sentiment from the profession as to its cause, and the modus operandi of the same.

A few weeks since, Mrs. F—, about 25 years of age, a healthy, well developed woman, a primipara, was confined, and after an very natural labor of three hours duration, delivered of a well developed female child, healthy in all respects, except the left hand and forearm, which presented the following condition. Upon the palmar and dorsal aspect of the hand as well as the flexor and extensor surfaces of the forearm about its middle third, were patches of skin and subjacent cellular tissue, irregular in form and about an inch or more in diameter, in a gangrenous condition.

Those portions of the skin between the patches on the hand and those on the forearm were in an erysipelatous condition as well as that portion of the integument extending from the patches on the arm to the middle third of the humerus. This was the real pathological condition of the child's arm and hand at birth. The labor was easy and natural—only *three* hours duration—*no malpresentation; no malposition.*

So easy was the labor that my copartner, Dr. A. J. Barrow, did not see the lady until an hour after the birth of the child, and found the hand and arm presenting the above condition. Considering it a very remarkable and interesting case in a pathological as well as physiological point of view, he invited me to see it, and agreeing fully in our diagnosis, we put the child upon treatment for gangrene, viz: a healthy wet nurse and glycerine and carbolic lotion applied to the gangrenous surfaces. In a few days the dark, livid surfaces cleaned off, leaving healthy granulations beneath. Glycerine and simple dressing were then applied, together with a due position of the hand and arm in a splint. The hand and arm are now well and in as good condition as the other, except slight stiffness and flexion about the wrist.

Such was the condition of the child's hand and arm, and such was the treatment. In accounting for this pathological condition of the hand and arm it may be argued, that there was malposition of the hand and arm with compression of the same, aggravated by violent manipulation during labor, and hence this state of the parts.

But the truth about this case is this: The presentation was a natural head presentation; the labor short and easy, according, not only to the evidence of the midwife in attendance, but also that of a very respectable and intelligent old lady, the mother of a large family, who sat by during the labor and testifies that she never saw a more easy labor, which could not have been the case if there had been any malposition or malpresentation. Again, such a condition of the parts could not have been brought about in so short a time even if there had been compression of these parts between the head and pelvis.

Under the effects of compression or violence, such a condition of parts (I presume) would not have taken place in less than forty-eight or seventy hours, and then there would have been a continuous chain or surface of disease, whereas we find here separate, irregular patches of disease.

Now, what was the cause of this condition of these parts, and how and when in the progress of the development of the fœtus in utero, did it produce its effects? That is the question. The cause, whatever it may be, and through whatever department of the animal econemy it may have operated, could not have produced its effect during the progress of development of the fœtus, because the diseased limb was fully as large as the other, and we can not imagine a portion of tissue degenerating by process of disease, to be at same time undergoing a development by a process of health.

The child, as before stated, was fully developed and healthy in all respects, except those parts affected with gangrene. The diseased condition then must have taken place at or about full term of development or soon thereafter, and before the birth of the child.

Now as to the cause of this diseased action, this pathological condition: Who can unravel the mystery and thread the process of its action?

Having stated these facts in relation to the child, allow me to connect with them the history of the mother during the Confederate struggle, and especially during her pregnancy. We have been reliably informed, that this lady and her mother, (whose sons were in the army and whose souls were wrapped in the cause of our country), very frequently dressed the wounds of soldiers when home on furlough, many of whom were afflicted with gangrene. This lady, the mother of this child, was necessarily called upon, during her pregnancy and about two months before her confinement, to dress a very severe lacerated wound, which she continued to do for some time. I submit, whether or not the impression made upon the mother's mind through the medium of the nervous system, from her associations with the character of wounds, above named, could have produced through the same medium by reflex action, a change in the nutritive functions of the parts, and hence, their present condition.

ART. IV.—DOES QUININE, GIVEN TO A WOMAM WHILE PREGNANT, HAVE ANY EFFECT UPON THE FŒTUS. By JOHN B. ROBERTS, M.D., Washington County, Ga.

Salome Taylor, colored, age about 26 years, average weight 135 lbs.; had always been healthy up to July, 1867, when she was taken with chills and fever (as that disease was prevalent in this section of country then) while about two months advanced in pregnancy. She continued to have chills at intervals, until February, 1868, when she was delivered of a female child, and the chills disappeared. Her attending physician, Dr. H., gave her a great deal of quinine and in such large doses that it affected her hearing, and at one time, during a period of three weeks, she was not able to hear at all, but was perfectly deaf. I was called in a short time ago to see the child of Salome that was delivered in February, 1868, and soon ascertained from her actions and the statement of her mother, that she was deaf. She is the fourth child, perfectly healthy and sound every way, except her hearing. She can laugh, cry and make a noise as loud as any child, but don't try to talk, only to herself while at play and then you can not understand her. I have known Salome and her husband for several years, and have traced their families as far back as I could, and can find no hereditary disease or any cause whatever why this child should be deaf, unless caused from quinine, and for this reason I have reported the case, in order that some one who has had more experience than I have, may give me some light upon the subject.

ECLECTIC DEPARTMENT.

"Carpere et Colligere."

Art. I.—Hair as a Suture and Ligature. By John T. Darby, of Columbia, S. C., Professor of Anatomy and Surgery, University of South Carolina.

Mr. President: I wish to present to the Association a series of cases taken from my note book on the use of Hair as a Suture and Ligature, and thus practically leave to the judgment of the members to decide upon its utility. Before giving these cases, permit me first to state the history, mode of application and properties, as points of interest.

During the late war, and up to this time, I have been endeavoring to devise some mode, or to procure some material, which would more readily promote union by primary adhesion. Sutures and ligatures, generally used, frequently become evils by producing suppurative action; for independent of the molecular death effected by strangulation with the ligature, or ulcerative action by tension in the case of the suture, there is in most of the materials composing the one and the other, from absorbent qualities, a tendency to excite inflammatory action beyond primary adhesion. To overcome the suppurative effect of flax, silk and cotton thread in the healing of wounds, metallic sutures have replaced to some extent these older forms; acupressure has been devised, torsion has been revived, and the antiseptic method of treating injuries instituted. Gold, silver and lead had been used as ligatures and sutures prior to 1852, when Dr. J. Marion Sims gave his experience of silver wire in vesico-vaginal fistula, and the success in this special operation by this distinguished Carolinian, established also the utility of metallic sutures in all classes of wounds where reparation without granulation is desirable or required. The non-absorbing property of inorganic matter, such as silver and iron, is the principal cause of utility as material for suture; the difficulty of removal from any tissue wherever placed, in comparison with organic vegetable or animal matter, and the inapplicability to certain parts of the body, as the operations upon the eye, or where the tissues are lax and delicate, are grave objections. Gold is too expensive for general use; lead is wanting in tenacity; silver and iron, equally good, if well annealed, become brittle and rigid, and even in expert hands frequently, upon removal, tear out and break up the line of union they benignly induce. Moreover, none of these substances are yet so made as to be suitable for ligatures. Copper, when drawn fine and coated with india rubber, is an excellent suture, and may be used for ligatures, as it is flexible, tenacious, and sufficiently pliable to be tied; but the necessity of having it thoroughly coated, whether with rubber, silver or gold, to protect tissues from its baneful influence, and the difficulty of obtaining it readily in this form, are objections to its general use not easily overcome. Flax, silk and cotton imbibe the fluids of tissues, and irritating forces thus evolved destroy primary adhesion, so that the gain over gold, silvor and iron, by increase of their pliability, flexibility and general adaptability, is not equal to the non-absorbent qualities of these metals. In truth, there is no ligature or suture, organic or inorganic, to which objections cannot be raised; and the day in which neither the one nor the other is needed for closure of vessels and wounds, will be an era in the history of surgery.

In the late war metalic sutures were often not easily procured at the South, especially in the field service, and coupling to this the objections already mentioned, of their inapplicability to certain parts, and the difficulty of removal in all tissues, I was led to make experiment, with other materials. My object was to find a material non-absorbent and innocuous, pliable and flexible, easily applied and removed, readily obtained and inexpensive. With coatings of various kinds upon silk, flax, cotton, fibrils of grasses, plants and sea-weed, I found that the flexibility of these materials were frequently destroyed or impaired; that often the coatings irritatad the tissues as an issue, or by becoming absorbed, only a temporary good effect was produced. For the causes assigned, each in turn was thrown aside, and the fibrous tissues of animals, such as tendon and gut, were employed, either coated or in natural condition. Among these latter, I prefer the silk worm gut, as it appears less absorbent than any other. In a case of closure of the vagina for an incurable vesico-vaginal fistula from almost entire destruction of the anterior wall, I permitted the silk worm gut sutures to remain from fifteen to twenty-one days, and little or no change was perceptible in their size from imbibition, and in consequence little difference in the stiffness and flexibility of the material was found. The difficulty in tying gut, and the shoulder made in the eye of the needle from want of pliability, are objections to them as a class, for ligatures and for sutures. In October, 1867, I mentioned to two prominent Southern surgeons my views upon the ligation of arteries and closure of wounds, and the difficulties which had met me up to that time, when both of them gave evidence of work towards the same end; Dr. Nott, in different kinds of sutures which he had coated to supply the place of metallic sutures; Dr. Nathan Smith, in the description of an instrument he had devised for checking hæmorrhage as a substitute for the ligature. It was in the summer of 1868 that I concluded to try the effect of hair as a suture and ligature, basing my opinion upon the resistance shown to the destructive influences of heat, cold, moisture and other forces from the non-absorbing power of this tissue, as proven by its preservation in exhuming bodies from church-yards buried for years, or disentombing mummies centuries old. The anatomical room further affords evidence of the difficulty in destroying hair, by the action of various chemicals, in comparison with other tissues. These facts, and that instanced by farriers, who use a pin with figure of eight twist of hair after bleeding horses to close the wound; that warts and simple growths, and even supernumerary fingers, (as I have seen in one family of negroes), are strangulated in domestic practice, led me, after my summer vacation to try, for the first time, in November, 1868, the effect of horse-hair upon the living subject. It was not until I had used the suture frequently, that it was made known to me, through a student of my class who had assisted at several operations, that hair had been used previously as a suture, and by reference, through him, to the Richmond Medical Journal, of March, 1866, page 225, I found an article taken from the Lancet on "Horse-Hair Suture as a Substitute for Wire." In this extract it appears that as early as the spring of 1861, Mr. Thomas Smith, of St. Bartholomew, used horse-hair. I make this statement as precluding any prior claim, which is due, as far as I know, to that clever surgeon; yet at the same time, I can, with equal justice to myself, state that in the use of hair as a suture, I was unaware of its having been previously employed. My object in this paper is to set forth the applicability and the mode in which I employ it, by giving twenty cases from many others, which is a sufficiently wide field to allow the members to base an opinion upon its merits.

For general use I prefer the black hair, as it can be more readily seen than the white, and the strength is the same when the dimensions through the short axes are equal. The strength varies greatly with the size of the hair, and that of the horse is preferable to that of the mare, on account of the urine in the latter at times passing over it, rendering it less clean and strong. On the skin of the negro the white hair shows best; so, if convenient, it is better than black or other shades, and the opposite condition holds for using the black for the white skin. By twisting two, three, four or more, any size requisite for ligature or suture can be made; as a rule, a single coarse black hair is sufficient for approximating the edges of a wound, unless several tissues are involved and gaping results. For the closure of deep wounds under this condition, slight tension will cut through a single hair, as would be the case with a small thread or silver wire; so on the same ground that a larger suture of metal or silk should be used, several twists of hair are indicated. As a ligature, two, three or more should be twisted together; a knot in each end will hold the twist. To pass the twisted hair as a ligature or suture through the eye of a needle the ends should not be cut evenly but at different lengths, so that applying a little wax, glue, gum, starch or soap, it will present a pointed extremity and readily run. In the ligation of arteries upon the dead body by the class, a twist of from four to five was used for the carotids, subclavian and axillary, the iliacs, femoral and popliteal; from three to four were used for the tibials, brachial, radial and ulnar, and at each point the inner coats were found cut—one end may be cut close, after the usual method, or, better, use torsion upon all the branches and apply to the main artery and perhaps to the largest branch, the ligature; loosely twist the end together and tie a slip knot to bind them. The plan of Lister of cutting both ends short, and producing healing over them by the anti-septic method, I regard as practicable with hair in degree greater than silk, flax or any material which imbibes fluids, though I confess to no experience with any form of ligature after his method. The manner of tying the knot may be the simple surgeon's knot, which of late I use, finding it amply secure, or a modification readily made by passing the end from the right to the left, and the left to the right; take then the end in the left hand and pass it through three times and draw down the loop; cross the ends back again from left to right, and take the end in the left hand pass it through twice and draw down the loop; a firm knot is then formed, which can be made still more secure by crossing from right to left, and passing the end in the left hand through and then drawn down once. Care should be taken in tying the knot, for suture or ligature, to see that the hair be not twisted in a fold, as it is likely to break at that point; or that the ends of the nails are not used against the hair in drawing the knot, as it will be cut through. In sutures no tension should exist in approximating the edges, and the strength of a single hair should be ample for this purpose. Greater strength is needed in ligation of arteries, but the great force put forth by some surgeons in tying a ligature is useless; if the ligature is sufficiently strong to produce strangulation in the outer coat, and adhesive inflammation in the inner coat, the effect desired is accomplished without that great application of power expended by some in muscular exertion sufficient to produce actual fatigue. A ligature should be sufficiently strong to give confidence of not breaking when brought down to a knot, nothing more is desired; and horse-hair is strong enough for all purposes when twisted as described for the variable size of arteries. In the strangulation of polypi in various cavities, or growths involving thick tough tissue, such as an aneurism by anastomosis of the scalp, the inelastic thread of great strength is more suitable and answers an excellent purpose. Before using the hair I wash it in a solution of carbolic acid and water, three or four grains to the ounce, to prevent any noxious influences from the presence of organic or inorganic particles. I have used hair in almost all operations where immediate union is desirable—as in amputations, the removal of tumors, incised wounds of the scalp, penis, scrotum, neck, trunk, eylids; in mucous membranes of the eye, mouth, anus, rectum and vagina, I have had experience sufficient and ample to testify to its utility. In deep wounds of the rectum and vagina, as in operation for fistula, recto or vesico-vaginal, I do not rank it as high as metallic sutures on account of the difficulty of tying in such narrow cavities. This objection does not hold for the mouth, as two cases of complete cleft palate (hard and soft) will show. In this cavity I have found no difficulty in tying the hair, and prefer it to any other form of suture. When wounds are superficial in the rectum and the vagina, I prefer also the hair; but where difficulty exists in ligation or knotting from depth, the twist, which can be used with metals, is more easily made for approximating the edges of wounds, and a suture of this variety is to be preferred. For general application however, the hair suture can be applied with greater advantage than metal. I have never used it in wounds of the intestine, but shall do so on the first case presenting, as it would be far preferable to metal or threads generally used, as in the one case stiffness would prevent accurate apposition of surfaces, and in the other absorbent properties might engender complications. In wounds where tissues are lax and delicate, as in the eyelips, the scrotum and penis, there is no question of preference over metallic sutures of any kind, for equally unirritating it leaves no scar; by pliability, it accommodates itself to the folds of the skin, and, by elasticity, is more easily withdrawn. I can testify to its adaptability and fitness in these parts, and can not better state how unirritating is its action in any tissue, than by referring to the experiments of Mr. Smith in contrasting it with silk sutures, and the instance he relates of the application of a ligature upon the femoral artery of a dog, where, for four months no irritation was produced upon the vessel or in the track of the ligature, for no ulceration occurred, and the tissues were firmly healed around the hair. The flexibility of the hair permits it to be readily passed, and its elasticity causes it to expand readily, and almost to relieve itself from the tissues in which it is applied. There is no fear, in consequence of this latter property, in removing hair sutures that the line of union which these firmly induce without irritation, will be torn or broken as with the metallic.

Upon the eye and its appendages, where sutures are required, as in coaptating the lax folds of the conjunctiva after operations for enlarging the palpebral fissure for removal of intra orbital tumors, in pterygium, tumors of the lids, ectropion and strabismus, it replaces metallic sutures, which are generally inapplicable, and is more advantageous than silk, flax or cotton threads. The stiffness of horse-hair, when cut close, is an objection to its use when the ends are exposed to the surfaces of the lids, but by leaving the ends sufficiently long to be held by adhesive strips to the forehead, cheek and nose, this objection is avoided. Moreover, I have recently overcome this objection by using the hair of the human head and the tail of the ox. My experiments are not sufficient as yet to report the success of these substitutes, except in a general way, but I can, at least, positively assert, that there is not so much irritation as with horse-hair, or threads of flax, silk and cotton. In iridodesis and prolapsus-corneæ after flap extractions, I believe it would be found preferable to the materials used for strangulating the iris and retaining the cornea to the sclerotic; but in these two operations my experience does not bear proof, as it has been only of recent date that I have used the hair of the human head and that of the tail of the ox. The latter, I find preferable, as it is sufficiently flexible to accommodate itself to the pressure by closure of the lids without irritation, and can be used singly, whereas, with the hair of the human head, a double suture is made by threading a long hair to its middle and forming it double. With these remarks, I give the results of horse-hair, in cases which, I hope, will serve to illustrate its uses. I have selected such cases as will show the application of hair in almost all general operations, and have, as will be seen, made a comparison of the action of metal, gut and hair sutures. The effect of silk, flax and cotton has not been tested with this form of material, as that of metallic, and non-absorbent matter was a better test. The length of time the sutures were allowed to remain was, in most of the cases following, to test the non-irritating quality of the hair.

CASE I.—November 9th. Mrs. G., aged between 40 and 45. Schirrus of the right breast. Removal of tumor; no ligatures, torsion used. Applied three silver, three silk-worm gut and three horse-hair. On the seventh day after operation, took out the three silver sutures, one gut and one hair. Effect the same with the silver, gut and hair; the wound healed by adhesive inflammation at the points of removal. Allowed two gut and two hair sutures to remain until ten days after operation. On 20th, removed the remaining four gut and hair sutures, as the wound had healed without suppurative action. The test in this case was the same for each, and no difference was seen in effect. Nov. 27, discharged patient.

CASE II.—December 30th. F. B., fireman, aged 30. Amputation of right leg for compound fracture of both bones. Accident on December 14th. Traumatic aneurism of peroneal artery on night of 29th. Ligated artery at distal and proximal end, but oozing from numerous branches forced amputation in upper third, Drs. Taylor and Smith assisting. Applied ten double horse-hair sutures. Though patient was in low condition from suppurative action and hæmorrhage, no sloughing in line of flaps took place. On January 8th, removed the sutures, union of primary adhesion having taken place throughout, except at internal and external angle where the silk ligatures were brought out. Subsequent disease of end of bone brought on abscesses which broke up in part line of union.

CASE III.—February 27th. S. G., negress, aged 22. Keloid tumor of right ear, involving lobe, and by connexion with skin extending over angle of jaw, so as to cover parotid region and part of sub-maxillary gland. Disease produced by boring the ear for ear-rings, two years prior to operation. Dissected off lobe from the cartilage, and the tumor from its parotid and sub-maxillary cutaneous attachment. Applied nine single horse-hair sutures and one horse-hair ligature. Removed ligature and sutures on fourth day, union being complete, except at extreme point of cartilage of ear. Dissected the skin over part and planted it into fresh skin over the posterior border of ramus of jaw by three horse-hair sutures. The patient left for home, some distance from city, and in eight days after second operation the three sutures were removed, union by primary adhesion having resulted, and up to this time, over one year, no reappearance of disease.

CASE IV.—March 5th. Mr. McC., planter, aged 72. Malignant tumor, producing pressure upon brain and protrusion of eye upwards and outwards by attachments to roof, floor and inner wall of left orbit. Commencing above insertion of tendo-oculi, carried an incision by following natural curve of supra-orbital ridge as far as external fourth, and removed tumor from roof and in part from inner wall; a second incision just below the insertion of tendo oculi, and carried along natural curvature of infra-orbital ridge to outer third, permitted remaining portion to be removed. Hæmorrhage free from ant and post-ethmoidal arteries; controlled by pressure and ice. The upper and lower flaps were replaced, the eye gently restored to natural site, and eleven single horse-hair sutures, six above and five below, perfectly coaptated the parts. On account of thinning of skin beneath lower lid, four sutures were detached by sloughing of the parts. On fourteenth day after operation, patient anxious to return to his planting interest, eighty miles distant, I removed the remaining seven sutures, the line of union being so perfect as to be with difficulty seen. The slough cicatrized after return home. The eye retained all of its motions except that produced by sup oblique which was necessarily detached. Patient died six months after from recurrence of disease in nose, pharynx, antrum and orbit.

CASE V.—March 12th. Col. R., aged 65. Malignant tumor of left temple, involving forehead as far as median line, and producing protrusion of the eye downwards, by dipping beneath supra-orbital ridge upon roof of orbit. To save the eyebrow, and allow room, as the tumor was firmly planted, a V shaped incision was made, the upper leg extending from median line of forehead over middle of growth as far as point of eyebrow; the lower leg extended from sup-int-angle of orbit following natural curvature of the supra-orbital ridge as far as end of first incision. This tongue of skin was dissected up, the eyebrow carried with it intact; the hæmorrhage was very free, torsion and acupressure used. Applied fourteen single horse-hair sutures, the parts coaptating nicely and without deformity. Patient on fourth day after operation (two acupressure needles being removed) left for his home, over sixty miles distant. On the seventeenth day after operation, his physician, Dr. Saunders, removed the sutures, and wrote "that union was perfect by first intention, except at extreme point of tongue over sup-external angle of orbit, where no suture had been applied and strip had been substituted." Dr. S. stated, also, that no irritation had been set up in track of sutures, and he had removed them as effecting no further good, by request of patient. I had requested that they should be allowed to remain two weeks, believing no inflammation would follow. The test was, as shown, three days beyond the fourteenth day.

CASE VI.—March 18th. Mrs. C., aged about 45. Tumor of right breast. Excision of entire gland; torsion for hæmorrhage, and two small arteries tied with horse-hair ligatures. Applied seven double horse-hair sutures. On sixth day after operation removed three stitches; on seventh, removed remaining four; ligatures taken away on third day. Slight sloughing in tract of middle suture from tension. Patient returned to her home, some 75 miles away, on the 9th day, with perfect union by primary adhesion.

CASE VII.—April 18th. Scipio, negro man, age between 50 and 55. Amputation of middle finger at metacarpo–phalangeal articulation, with excision of head of metacarpal bone for necrosis,* produced by whitlow and palmar abscess. Applied nine sutures, three silver, three double and three single horse-hair. On fifth day after operation two silver and one double horse-hair cut out from tension. On the ninth day took out remaining sutures, union being perfect by primary adhesion, when the last six sutures were removed. No difference manifested in line of sutures, silver or hair. The number used was to test efficacy and compare the two kinds.

CASE VIII.—July 28th. J. H., aged 29. Atheromatous tumor of the right side of neck immediately under ext. jugular vein. Dissected ext. jugular one and a half inches from the sac of tumor, as it was bound to it by adhesive inflammatory effusion. No hæmorrhage. Applied five single horse-hair sutures. On third day middle suture cut out from sloughing of skin made thin by pressure of tumor. On seventh day removed three sutures, and on fourteenth, the one remaining. Wound healed by primary adhesion, except at point which sloughed from the thinning of skin lining a small cicatrix.

CASE IX.—September 4th. Mrs. C., from Louisiana, aged 37. Cystic tumor of outer canthus of right eye. Removed entire. Two single horse-hair sutures in lids to unite canthus. Removed on 4th day; union perfect; no deformity, no scar.

CASE X.—September 7th. J. W., bar-keeper, aged 38. Orifice in hard palate, involving entire palate processes of superior maxillary bones, also loss of turbinated bones, vomer, and triangular cartilage, with one half of soft tissue of nose, from syphilis. Orifice measured antero-posteriorly 1¼ inch—transversely 1⅜ inch. Periosteum and mucous membrane brought down from above alveolar processes, and two lateral incisions, after mode of Langenbeck, closed the opening. Applied five single horse-hair sutures in median line, and two in left lateral incision. On day after operation, removed sutures in left lateral incision, as effecting no good, from tension being so great as to cause partial cutting out. On 4th day, removed anterior median suture. On 6th day, took out third and fourth median sutures. On 11th day removed the second; and, on September 24th, the last and fifth suture—seventeen days after operation. This case was exhibited to the Association, with perfect vault, except a small orifice at anterior median point of palate processes of palate bones, measuring less than one line in diameter. Speech improved so as to be readily understood, and satisfaction of patient so great as to cause persistent refusal to have the small orifice closed by any mode of treatment proposed. The test of the hair in this case proved its great utility in application *in removal, in non-irritation*, and the cure.

CASE XI.—R. B., bar-keeper, aged 34. Scalp wound. Six single horse-hair sutures. Five removed on the 14th day after injury. Union by primary adhesion. One stitch, the sixth, was removed twenty-one days after accident. No irritation in track, and no inconvenience experienced by patient from non-removal of stitch.

CASE XII.—October 7th. E. J., aged 20. Congenital fissure of hard and soft palate, complete. Hare-lip operated upon when nine months old with excellent result, by Dr. T. T. Robertson, of Fairfield, S. C. Operation for closure after Langenbeck's method in soft and hard palate at one sitting, without chloroform. October 12th, fifth day after operation, sloughing in soft palate to the left median line caused four sutures to come away. Oct. 18th, the eleventh day, removed one suture in hard palate. Oct. 21st, the fourteenth day, removed four in hard palate, and one from uvula. Oct. 23d; removed two in soft palate, and one from uvula, thus making on the fifteenth day after operation, the removal of the thirteen single horse-hair sutures applied. Complete union resulted, except at point where the sloughing took place, leaving an orifice to the left of the median line in the soft palate, adjoining base of uvula, 1½ line in transverse diameter. The case was exhibited to the Association for examination, with speech partially improved, patient stating that he was more readily understood by strangers than prior to operation.

Case XIII.—October 8th. H. R., negress, aged 54. Fibroid tumor, filling outer wall of left orbit, with two-thirds of floor and roof, causing protrusion of eye, with considerable deformity and double vision. Incision through skin at outer canthus and conjunctiva allowed the tumor to be removed. It was deeply situated, and involved the external rectus to an extent which made it necessary to cut out a portion of this muscle. Weight of tumor three drachms and four grains. Applied four single horse-hair sutures, two in the conjunctiva, and two to unite external canthus. Union by primary adhesion. Removed the sutures fourteen days after operation. Case exhibited to the Association; no deformity. Vision single, and all movements of the eye perfect, except through action of ext. rectus.

Case XIV.—October 31st. Charles Harding, aged 19. Strangulated indirect inguinal hernia. Hernia congenital and readily reduced until last descent. Patient brought from the country almost in a dying state to Dr. Fair, who finding taxis under chloroform of no avail, called me in consultation, and an operation was decided upon. Strangulation six days prior to operation. Stricture found at internal abdominal ring, and contents of sac returned without opening sac. Chloroform given, and pulse at sixty; great distension and dyspnœa. In addition to returning contents of sac, the sac was dissected from the cord, and with my thumbs placed upon the fundus, pushed through the internal ring into the abdominal cavity, that it might act as a plug and effect a radical cure. The ring was closed by a silver suture, and four double horse-hair sutures applied in line of incision. The distension increased until the fourth day after the operation, when the bowels were freely moved; so soon as this condition resulted, the tension from the sutures was removed and ulcerative action in their track immediately ceased. Union by primary adhesion, except at two extremities of incision, purposely left unclosed for discharges, and in the track of sutures as far as they had cut from the tension by distension of the abdomen. Nov. 7th. Silver wire uniting internal abdominal ring, and the four sutures were removed. Under strong supporting treatment the wound healed kindly, and on the twenty-second day after the operation, the patient was allowed to sit up. A severe attack ot bronchitis added to the difficulties in the case, as the constant cough made the descent of the sac probable by destroying the adhesion at the internal abdominal ring, so pressure by a compress and adhesive strip, and the recumbent position was enjoined. On the twenty-fifth day walked about his room; on the twenty-eighth, about the grounds; on the thirtieth, I discharged the case. March 6th. Examined patient, found the cicatrix firm, no impulse on coughing, no difficulty experienced in walking, and for six weeks in active labor as a teamster and assistant in loading his wagon from a railroad depot.

CASE XV.—October 31st. Negress, aged about 55. Large size of palpebral fissure from a previous operation in removal of orbital tumor. Operation for deformity. Applied five single horse-hair sutures, two to conjunctival fold; three to union of lids. Allowed sutures to remain as a test for seventeen days. Union by primary adhesion and deformity cured.

CASE XVI.—November 4th. A lady, aged 38. Malignant tumor of left breast involving axillary glands and producing œdema, great numbness and pain in left arm. Breast partially removed by Dr. Chisolm two years previously. Removed remaining portion ot gland, all axillary glands and external intercostal muscle between seventh and eighth ribs for two inches. Exposed surface extended from second rib to ninth intercostal space. Torsion used for arteries; no ligatures applied. Avoiding all parts where tension would occur in approximating edges of wounds, I was able to close two-thirds of exposed surface by one pin with the figure of eight twist of horse-hair, and nine double horse-hair sutures. Dr.

Hill, in charge of case, removed nine sutures on ninth day, union taking place by primary adhesion. The pin was removed a day or two previous to removal of sutures. Subsequently, erysipelas broke up line of union in parts, but three months after operation patient visited the city with the wound healed, save a small, shallow, ulcerated surface in old cicatrix of former operation. The general health had improved from relief of the swelling, numbness and pain of the arm. Prior to operation the pain was insupportable, and to relieve pressure upon the axillary vessels and brachial plexus the operation was performed.

CASE XVII.—November 11th. Abner Nelson, negro, aged 25. Melanotic sarcoma of left eye. Enucleation. Hæmorrhage very free; checked by ice water. Palpebral fissure which was enlarged by free incisions through outer canthus (from great size of growth) closed by four single horse-hair sutures. Union by primary adhesion. Removed sutures on eighth day after operation, patient returning home, sixty miles away, on the ninth day.

CASE XVIII.—November 18th. Congenital cleft pallate hard and soft, with double hare-lip. Fissure wide, complete and extensive. Without chloroform cut the levator and tensor palati, palato pharyngeus and palato glossus. Little hæmorrhage. On November 19th was to have closed the fissure, hard and soft, but on visiting patient found him with a malarial chill. November 20th —chill, followed by fever, with pulse at one hundred and twelve. November 21st—no chill; liberal doses of quinine were given for two previous days. Good effect by preparatory operation of the 18th was almost destroyed by this delay. Gave chloroform and performed the usual operation for uranoplasty and staphyloraphy, after the method of Langenbeck, in the hard palate, and Fergusson, in soft. Applied eleven sutures: seven single horsehair, one silk worm gut and three silver, to test the three kinds. The sutures were placed in the following order, from the anterior median point: first, silver; second, hair; third, silk worm gut; fourth, hair; fifth, hair; sixth, silver; seventh, hair; eighth, silver; ninth, hair; tenth, hair; eleventh, hair. Patient's condition was unfavorable by prolonged attack of intermittent fever, but coming from a distance, and being urgent in demands for an operation, I yielded to his wishes. November 22d—no chill; slept well on night of 21st and parts looking well. November 23—same report as for 22d. November 24th—some tendency to sloughing in posterior parts of left lateral incision at junction of soft with hard palate. November 25th—orifice one-third inch in diameter between median line of union and left lateral incision, and confined to soft palate. November 26th—sloughing continued, and seventh and eighth sutures (hair and silver) removed, as they had cut out from left of median line. November 27th—sloughing increasing; remove sixth and ninth sutures, (silver and hair). November 28th—removed tenth, (hair). November 29th—removed eleventh, (hair). Union perfect in hard palate, and partial in soft, the uvula having united. November 30th—sloughing of uvula, removed fourth, (hair). December 1st—complete separation of uvula, and entire separation of soft palate; the lateral incision also sloughing. Complete union in the median line of hard palate. Iron and quinine, which had been given from Nov. 24th, increased in quantity.

December 2d and 3d—little change to note. Dec. 5th—absent from the city. Dec. 6th—returned; examination of wound showed that sloughing had ceased, and healing of left lateral incision had commenced; removed gut suture (No. 3) as it had begun to cut out. December 7th — silver suture in anterior median point (No. 1) from tension by closing of left lateral incision had cut out, leaving a minute orifice. Granulations in right lateral incision pale; no tendency to healing. December 8th—took out remaing horse-hair sutures, (Nos. 2 and 5); no signs of cutting; these last had remained seventeen days. Dec. 9th—operated for the double harelip. The fissure in the soft parts extended into the nostril on either side, following the fissure of the intermaxillary bone. Chloroform given, and nine horse-hairs single, and three pins with horse-hair figure of eight used. Two lateral pieces of adhesive strip, extending from below each ear, brought over a compress of cotton on the cheeks, took off the strain upon the lip and brought the parts together, after Hainsby's apparatus. By stitching the free ends together, and thus leaving a space uncovered by the strip, the line of wound could be seen through the interspaces of the threads. Dec. 10th—doing well. Dec. 11th—forty-eight hours after operation removed the three pins, leaving the twists of hair. Dec. 12th—found median inferior edge separated;

pared the parts and put in a single hair. Dec. 13th—wound doing well; removed lateral strips, bringing cheeks together; took off the figure of eight twists. Dec. 14th—removed five horse-hair sutures and placed small adhesive strip to support the parts.' Dec. 15th and 16th—no change in dressing. Dec. 17th—removed the four horse-hairs first applied, and also the one added on the 12th. Union perfect throughout. Slight notch in median line, which was hidden by firmly bringing up the lower lip. Dec. 24—patient returned home with harelip cured, union of hard palate and lateral incisions partially healed. March 1st—received a letter from patient stating that the lateral incision had entirely healed; hard palate was firmly united, could swallow fluids without trouble; speech not much improved.

CASE XIX.—December 7th. Mrs. P., aged about 48. Excision of left breast for non-malignant tumor. Applied two horse-hair ligatures (double) and used torsion for other arteries. Seventeen sutures applied, thirteen single horse-hair and four silk worm gut with no adhesive strip. Six days after operation the wound had healed by primary adhesion. Removed ligatures on fourth day. Erysipelas supervening on the seventh day, the sutures from tension commenced cutting, and effecting no good, were removed. The entire edges of wound sloughed, and the cure was slow.

CASE XX.—December 7th. J. C., aged 38. Cut in the back by a wide blade knife, with sharpened point, on the right of vertebral column from crest of ilium to last intercostal space. The wounds were five; deep and gaping; the man very muscular and weighing over one hundred and ninety pounds, had fainted twice before my visit. Dr. G. S. Trezevant, who had arrived before me, kindly assisted in dressing the wounds. The hæmorrhage had been very free from a deep wound corresponding to transverse process of third lumbar vertebra, and an artery still bleeding was ligated with double twist of horse-hair. There was hernia of the lung between the eleventh and twelfth ribs; the lung not injured. Applied twenty-four double horse-hair sutures, varying from one-third to two-thirds of an inch apart. Injected hypodermically half grain of morphine, and left the patient resting well. December 8th—pulse eighty-four; slept well; no hæmorrhage; retention of urine and relief with catheter. Dec. 9th—pulse 100; retention again relieved;

slept well from injection of morphine; wounds healing rapidly. Dec. 10th—did not visit patient. Dec. 11th—pulse 90; slight suppuration at one or two points from tension upon sutures. Dec. 13th—visited patient and removed sixteen stitches; three points suppurating; two wounds healed by primary adhesion, and three others healed, except in track of three sutures, which had been removed from tension producing cutting. Dec. 18th—after five days absence again visited patient, who was sitting up; removed the remaining eight stitches, one of which had almost cut out; three points still suppurating. Dec. 23d—discharged patient, wounds having entirely healed.

I will not detain the members longer by detailing cases, as these enumerated will or will not convince of the utility of the hair as a suture. In plastic operations and wounds about the cheeks, lips and eyes, it can be used with great advantage, as my experience would show. In scalp wounds I have used it with great service; and so, also, in wounds by operation upon the scrotum, penis and the perineum, I give it preference to any other suture. In laceration of the perineum and after circumcision for phimosis, the action of hair leaves little to be desired, having left sutures in these operations from ten to twenty days without irritation. I close the paper by giving a skeleton of the cases enumerated, that the operations, kinds and numbers of sutures may be taken at a glance.

Case I.—Excision of breast. Three silver, three silk worm gut, and three single hair sutures. Torsion.

Case II.—Amputation of leg. Ten double horse-hair sutures, three silk ligatures. Torsion.

Case III.—Excision of keloid tumor. Nine single hair and one horse-hair ligature. Torsion.

Case IV.—Malignant tumor of orbit. Eleven single hair sutures. Pressure on ice.

Case V.—Malignant tumor of forehead, temple and orbit. Fourteen single hair sutures, two acupressure needles and torsion.

Case VI.—Excision of breast. Seven double hair sutures, two ligatures of hair and torsion.

Case VII.—Amputation of middle finger at metacarpo-phalangeal articulation. Nine sutures, three silver, three single and three double hair. Crushed two arteries with pincers.

Case VIII.—Removal of tumor of neck, (atheromatous.) Five single horse-hair sutures. No hæmorrhage.

Case IX.—Encysted tumor of outer canthus of right eye. Two single horse-hair sutures.

Case X.—Destruction of palate processes of superior maxillary bones complete. Orifice transversely one and three-eight inches, and one and one-eight inches antero-posterioriy, urano-plasty. Seven single horse-hair sutures.

Case XI.—Incised wound of scalp. Six single horse-hair.

Case XII.—Congenital cleft palate (hard and soft) complete fissure. Urano-plasty and staphyloraphy. Thirteen single horse-hair.

Case XIII.—Intra-orbital fibroid tumor. Four single horse-hair.

Case XIV.—Strangulated inguinal hernia. Sac returned. Internal ring closed by one silver wire. Incision by four double hair.

Case XV.—Enlarged palpebral fissure from a previous operation producing deformity. Five single horse-hair.

Case XVI.—Excision of malignant tumor of breast and axillary glands. Exposed surface from second to ninth intercostal space. One silver pin with horse-hair figure of eight and nine double hair. Torsion only.

Case XVII.—Melanotic sarcoma of left eye. Enucleation. Four single horse-hair. Pressure and ice for hæmorrhage.

Case XVIII.—Complete fissure of hard and soft palate with double hare-lip. Urano-plasty and staphyloraphy. Seven single hair, three silver, one silk worm gut. For hare-lip, three pins, with figure of eight twist and nine single horse-hair.

Case XIX.—Excision of breast. Thirteen single horse-hair, four silk worm gut sutures. Torsion and two double horse-hair ligatures.

Case XX.—Incised wounds of back and loin. One double ligature and twenty-four horse-hair sutures.

ART. II.—ON THE TREATMENT OF COMMENCING CHRONIC DIARRHŒA IN YOUNG CHILDREN. By EUSTACE SMITH, M.D., Physician Extraordinary to H. M. the King of the Belgians; Physician to the North-West London Free Dispensary for Sick Children, &c.

Chronic diarrhœa in young children, a simple functional derangement which becomes confirmed, is always a serious and often a fatal disease. It usually begins very insidiously, and not unfrequently results from a slight chill or a meal of improper food, which excites a little irritation of the stomach and bowels. This irritation, when once set up, is easily maintained by causes the same in kind, although less in degree, than those which originally provoked it, and a chronic catarrh is induced, which becomes less and less amenable to treatment the longer it continues.

A child of a year or eighteen months old is exposed to cold and shortly afterward the bowels become slightly relaxed. The purging is, however, neither severe nor of long continuance; it speedily ceases and the child appears to have recovered. The bowels, however, do not return to a healthy condition. There is no diarrhœa in fact; complaints are made that the bowels are not sufficiently open. For a day or two they are not relieved at all; then, on the third day, the child has two or more large, sour pasty-looking motions, more or less slimy from the mucus with which they are mingled, and passed with considerable straining efforts and much apparent discomfort. This state of things continues for weeks. The child gets a little pale, but if able to walk still keeps on his feet. He is occasionally sick, vomiting sour-smelling food, with sometimes a little bile, and his breath often smells sour and offensive. The appetite is all this time usually unimpaired; he may occasionally refuse his food for a day or two, but his appetite soon returns, and with the exception of an occasional attack of diarrhœa, lasting for one or two days, the bowels remain irregular, the stools, when they occur, being large, pale, pasty, and sour-smelling, consisting evidently of undigested food, mixed with a little fæcal matter and a considerable quantity of mucus. With the exception of gradual loss of flesh, color, and spirits, there is nothing very positive in the condition of the child by which the attention can be arrested.

After some weeks, or even months, during which he has got thinner and paler without any change in his general state, the child is seized with an attack of purging, which does not, as has been usual, pass away. On the contrary it becomes more severe, and the stools increase in number and in quantity. The child now loses flesh rapidly; he is taken altogether off his feet and his state becomes one of great danger.

These cases are often looked upon as instances of disease of the mesenteric glands, but the most careful examination of the belly will seldom furnish any satisfactory evidence of glandular enlargement. The temperature is lower than in health and seldom rises higher than 98° Fahr. in the rectum. There is no particular desire for drink. The child is a little restless at night; he takes his food with considerable appetite and even sometimes with voracity; the food, however, does not nourish him and appears hardly changed in the stools.

These cases, obstinate as they prove when not treated judiciously, will yet yield quickly to suitable measures, and unless the weakness and emaciation are very great do not as a rule present any great difficulty in their management.

The object of the present paper is to describe the method of treatment applicable to these cases during the period, often sufficiently extended, before the diarrhœa has become confirmed, when the child is becoming more and more listless and pale, is losing flesh and strength, while his motions, infrequent but copious, exhibit the characters which have been described above.

The presence of undigested food in the motions of a young child, especially if that child exhibits evident marks of deficient nutrition, is a sign that the diet is an unsuitable one and requires alteration. Whether the digestive weakness be a simple functional derangement, or be due to the existence of organic disease in either case our object is the same, viz: to adapt the child's diet to his powers of digestion, so that the food he swallows may afford him the nourishment of which he stands in need, and may leave as little undigested surplus as possible to excite further irritation of his alimentary canal. In such cases, however, this accurate adaptation of diet is often by no means an easy task. Articles of food on which we are accustomed to rely, and from which a healthy child derives his principal support, will here often fail us altogether. Thus, farinaceous food should be given with the utmost caution, and will seldom be found to agree except in very small quantities. Even milk, our great resource in all cases of digestive derangement in children, must be sometimes dispensed with. It is not so very uncommon to find cases where milk, whether diluted with water, or thickened with isinglass, or with farinaceous food, cannot be digested. So long as it is taken, the pale putty-like matter of which the motions consist, and which is passed in such large quantities, is evidently dependent upon the milk diet, and resists all treatment so long as that is continued. In such cases, which occur most commonly in children between one and two years of age, the milk must be replaced either wholly or partially by other foods.

Although farinaceous food is not as a rule well borne in these cases, yet Liebig's farinaceous food for infants (as prepared by Mellin, of "Liebig's Patent Concentrated Milk Company")* may always be tried and seldom disagrees even with the youngest infants. In its preparation the starch of the wheaten flour, which forms one of its constituents, is already converted in great measure into dextrine and grape sugar, so that the most important part of the work of digestion is performed before the food reaches the stomach.

Whatever be the diet adopted, our object is to keep up the nutrition of the body with the smallest possible amount of irritation to the alimentary canal, and the food, whatever it may be, which will produce this result, is the food best suited to the case. Without attention to this point little good can be effected by the use of drugs alone. The successful adjustment of the diet, an adjustment in which the quality and quantity of food to be allowed for each meal are accurately adapted to the powers and requirements of the patient, is a matter which can be properly learned only by experience, and which often makes large demands upon the tact, the ingenuity, and the patience of the medical attendant. This experience every one should labor to acquire, for without it success can seldom be attained in the treatment of the chronic functional derangements of young children.

In all cases, if the patient be a sucking child, he should be limited strictly to the breast; or if he have been only lately weaned, the breast should be returned to. If from any reason a return to the breast is impossible, our great trust should be placed in cow's milk, more or less copiously diluted with lime-water. With children under a year old milk is very seldom found to disagree. If the child be no more than six months old, nothing should be allowed but milk, or some preparation of milk, as milk and lime-water (equal parts), whey with cream, or milk and water thickened with isinglass,* or with Liebig's food for infants, in the proportion of one teaspoonful to four ounces of fluid. By using these different preparations a certain variety can be introduced into the diet, and the meals should be so regulated that the quantity taken on each occasion and the length of the interval by which the meals are separated, may be properly proportioned to one another and to the state of the patient. The Liebig's food should be given not oftener than twice in the day, and if it excite flatulence, or if any sour smell be noticed from the breath or evacuations, the quantity of one teaspoonful should be diminished, or the food should be even discontinued altogether.

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*This, the best form of Liebig's food for children with which I am acquainted, can be obtained of the manufacturer, at 16 Tichborne street, Quadrant.

Beyond the age of six months a little weak beef or veal tea, or the yolk of one egg unboiled, may be added to the diet. The egg is best digested when beaten up with a few drops of brandy and a tablespoonful of cinnamon water, as in ordinary egg-flip. As with younger infants, the quantity of food to be given at one time must depend upon the strength of the child and the condition of his stools.

If a child be over twelve months old, very small quantities of farinaceous food may sometimes be ventured upon, and will often agree. The best form in which this can be given is well-baked wheaten flour, of which one teaspoonful is all that should be allowed at one time, prepared carefully with milk.

So long as the milk is well borne the arrangement of the diet is comparatively an easy task; but in the not uncommon class of cases where milk is difficult of digestion, and can only be taken in very small quantities, a different dietary must be adopted. These cases usually occur in children of eighteen months or two years old. A good scale of diet for a child of a year and a half old, in whom this peculiarity is noticed, is the following, consisting of five small meals in the twenty-four hours:—

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*Isinglass is useful for its mechanical action in separating the particles of casein so as to prevent the formation in the stomach of a large dense indigestible clot. By this means the casein is finely divided, and its clots resemble more the flocculent coagulæ of breast-milk.

1*st Meal.*—One teaspoonful of Liebig's food for infants (Mellin's) dissolved in four ounces of milk and barley-water (equal parts).

2*d Meal.*—Six ounces of beef-tea, of the strength of a pound of fillet of beef to the pint.

3*d Meal.*—Six ounces of fresh whey containing a tablespoonful of cream.

4*th Meal.*—The unboiled yolk of one egg, plain, or beaten up with a tablespoonful of cinnamon water, a little white sugar, and fifteen drops of brandy.

5*th Meal.*—Same as the first.

In this dietary the first and the fifth meals contain a small quantity of milk. If that be found not to agree, the food may be dissolved in barley-water alone, or diluted with an equal quantity of veal broth, or veal broth alone may be given. In any case the quantities recommended should not be exceeded; for it is wise, at any rate at first, to be sparing rather than liberal in regulating the allowance of food. It is better that the child should be hungry than overloaded, and so long as the stools retain their pasty character it is evident that the food taken remains in great part undigested.

If the milk agree, it can be gradually increased in quantity; and as digestion improves, which it will do after a few days of this carefully regulated diet, other articles of food can be introduced, as roast mutton underdone, and well pounded in a mortar; the flower of cauliflower well boiled in water, or stewed with gravy until very tender. In the use of farinaceous foods great caution should for some time be exercised, and they should be given sparingly until convalescence is completely established, and the stools have reassumed a perfectly healthy character.

In these cases, and indeed in all cases where a special diet is recommended for children, a dietary as given above should be written out by the medical attendant. Not only the kind of food, but the quantity to be given for each meal, and even the hour at which the meal is to be taken, should be duly set down, so that no excuse may be available for neglect or misapprehension. It cannot be too often repeated, that in cases such as these it is upon the judicious arrangement of his food that the recovery of the child depends, and that where the diet is properly selected the exact medicine to be ordered becomes a matter of comparatively secondary importance. Even without the aid of drugs at all, the digestive powers would no doubt in many cases speedily right themselves under such a diet as has been sketched out above, but recovery is materially assisted by a judicious selection of remedies. It is well to commence the treatment by an aperient dose of rhubarb and soda, to clear away any indigestible food which may have remained in the bowels, after which the laxative should be followed up by a mixture containing an alkali with aromatic. It is difficult to over-estimate the value of alkaline remedies in the treatment of digestive derangements in children. In all children, in infants especially, there is a constant tendency to acid fermentation of their food. This arises partly from the nature of their diet, into which milk and farinaceous matters enter so largely; partly from the peculiar activity of their mucous glands, which pour out an alkaline secretion in such quantities. An excess of farinaceous food will therefore soon begin to ferment, and an acid to be formed which stimulates the mucous membrane to further secretion. Alkalies are therefore useful, firstly, in neutralizing the acid products of this fermentation; and, secondly, in checking the too abundant secretion from the mucous glands. Either potash or soda may be used; of the two the former is perhaps to be preferred, as being a constituent of milk, the natural diet of children, it may be considered less as a medicine than as a food. Five to ten grains of bicarbonate of potash may be given, combined with an aromatic, several times in the day, and it is important that the dose should be taken an hour or an hour and a half after each meal, so that any excess of acid left at the end of digestion must be at once neutralized.

If the stools are loose and are passed frequently, two or three grains of the subnitrate of bismuth may be added to each dose of the mixture, and if much straining be noticed a drop of laudanum will be a useful addition to check the abnormal briskness of peristaltic action.

It is important that the aromatic be not omitted from the prescription. This class of remedies is of very great value in all those cases of abdominal derangement where flatulence, pain, and spasm, resulting from vitiated secretions and undigested food, are present to increase the discomfort of the patient. Such dyspeptic phenomena are usually rapidly relieved by the use of these agents; and the employment of aniseed, cinnamon, caraway-seed, or even of tincture of capsicum in minute doses, will be found of material advantage in combination with the other remedies which have been enumerated.

So long as the tongue remains furred, or the motions sour-smelling, the alkali should be persisted with, and the rhubarb and soda powder can be repeated every third morning. If it be thought desirable at the same time to administer iron, the citrate of iron and ammonia, in doses of five grains, can be added to the mixture. Tincture of nux vomica is also useful in one-drop doses.

The so-called alteratives are in these cases of little value, for it is no good attempting to stimulate the functions of the liver by cholagogues. Under the use of antacids and aromatics, with an altered diet, food soon begins to be digested, and the appearance of the stools becomes more healthy.. After a time, acid preparations, such as the pernitrate of iron with dilute nitric acid, may be given with cod-liver oil.

A point which must not be overlooked in these is attention to the action of the skin. In all abdominal derangements in children the cutaneous secretion is apt to be suppressed early, and the skin soon becomes dry, rough and harsh. When this is found to be the case, the child should be bathed every evening with hot water, and be then freely anointed with warm olive oil. By this means the suppleness of the skin is soon restored. Warm clothing should be worn, with flannel next to the skin; and as an additional precaution, to guard against the risk of chills, an ample flannel bandage should be applied as a protection to the belly.—*London Practitioner.*

ART. III.—ON THE PAIN OF PARTURITION, AND ANÆSTHETICS IN OBSTETRIC PRACTICE. By A. ERNEST SANSOM, M.D., London, M.R.C.P., Physician to the Royal Hospital for Diseases of the Chest; Hon. Sec. Medical Society of London.

"More than ten years ago observation led me to the opinion that the commonly received notion that anæsthetics primarly affected the brain and nervous system was erroneous. Dr. Snow had previously attacked the validity of the doctrine of the determination to the brain by the summing up of his conclusions with the phrase. 'Narcotism is suspended oxygenation.' A further elucidation of this was made, in 1856, by Dr. George Harley, who proved, by comparative experiments, that anaesthetics arrest the oxidation of the blood, even when removed from the body. I made a large number of experiments on the influence of anæsthetics upon the blood and upon the circulation, and in a paper read before the Medico-Chirurgical Society, in 1861, and a communication to Dr. Beale's Archives of Medicine, No. vii., 1861, I enunciated the doctrine that anæsthetics operate indirectly by suspension of oxygenation, and directly by action upon the blood and upon the forces of circulation. This doctrine I have discussed in detail in my book on Chloroform. Subversive of our former views as to the action of anæsthetics, I could not expect that this theory should be at once received, and in the reviews which have appeared both in this country and America I find that it is not yet admitted as the correct explanation of the phenomena of narcosis. In the American Journal of the Medical Sciences, however, the reviewer does me the high compliment of calling mine the physico-chemical theory; a compliment, because in my opinion it is precisely in so far as a theory can, by physico-chemical means, explain the phenomena of Biology, that it will stand the test which the progress of science applied to it.

"It is chiefly because I am convinced that this theory affords the best answer to the *practical* problems of anæsthesia, that I bring it before the Society, and, as evidence in its favor, it is no small consequence to me to have this written testimony of Dr. Beale: 'I have no doubt your view of narcotism is true. It accords with the inferences arrived at from so many kinds of observations.'

"I will not stay to inquire whether anæsthetics act by absorption into the blood. Every one, I think, now agrees that they do thus act. It is scientifically proved that the agent, in its circulation through the system, suffers no chemical change. Chloroform circulates *as chloroform.*

"This attained, how do anæsthetics proceed in their action? Do they directly attack the nerves and nerve-centres? If this could be answered in the affirmative there would be little need to inqure further. The latest writers on the action of medicines (except always Dr. Bence Jones) and those who embrace the theory of Messrs. Lallemand, Perrin, and Duroy, adopt this view, but it is surely no unfair criticism to say that those who adopt it admit that, so far as narcosis is concerned, 'all that we know is, nothing can be known.'

"We will, in our investigation, start from facts which have been actually established. According to Dr. Snow's careful computations, it requires only twenty-four minims ot chloroform circulating in the mass of the blood to induce the most profound narcotism; it follows that the effects known as narcosis are due to the circulation of the agent employed in a state of extreme dilution. What effect would a solution ot such tenuity have on the nerves and nerve-centres of sensation? Direct experiment says none, for not only this but a concentrated anæsthesia. But it may be said that there is some molecular action accomplished through the vital force between the anæsthetic on the one hand and the particles of the nerve acted upon on the other. This is the only feasible basis on which the hypothesis of the action of anæsthetics on brain matter *can* rest; and what evidence is there to support it? Of course we know that lesions of the central nerve-structures produce symptoms identical with those ot narcotism; but in such cases the lesions are to be detected by physical examination. Moreover, in the coma induced by the alkaloids we discover congestions and effusions which we can trace to a causative relation with the symptoms. But what is the cause in the narcosis induced by chloroform? The brain is found to be pallid rather than injected, and no physical lesion is to be discovered.

"The action of alkaloids would certainly lend countenance to those who hold to the theory ot direct action; but the physical conditions are very different from those which obtain in the case of chloroform. By a new and perverted nutrition, certain organs become modified by a body that cripples their functions. So strychnine will influence the medulla oblongata, veratrine the heart, curare the muscles; but, by a process of nutrition they are absorbed, and, by a process of excretion, eliminated. *If there is this intimate union between chloroform and nerve-molecules, why do the effects of the former so readily pass off?* Furthermore, it is wholly unnecessary that we should presuppose that a primary implication of the nerve-centres is necessary for the manifestation of the phenomena of narcosis. For we know that these occur in apnœa, in which no direct toxic agent is concerned, and an identical state is induced by agents which no one suspects of a direct action on nerve matter; by carbonic oxide, which spoils and destroys the blood-globules; by carbonic acid, which arrests the oxidation of blood by the physical effects of its presence; and by other gases which interfere with the due aeration of the blood.

"I have now shown the difficulties which lie in the way of our reconciling with the current ideas a sufficient explanation of the phenomena of anæthesia. My plan of argument does not render it necessary that the latter should be *proved* to be untenable. My objections may be counted pungent, but not fatal; but if, after showing the stumbling-blocks on our way, I can by another theory abolish discrepancies and incongruities, and can explain signs which have remained unexplained before, I shall make a step toward an expression of the most attainable truth. Having thus shown what anæsthesia is not, I shall endeavor fo show with what certainty I can what it is.

"'Narcotism is suspended oxygenation.' This dictum is the key-stone of the theory which explains the action of the most dissimilar narcotics. The oxygenation of the blood suspended, the molecular integrity of the tissues is interfered with; there becomes, as Dr. Richardson has put it, 'inertia of the molecules;' but neither of these phrases explains the *ultima ratio.* The question yet remains, How do anæsthetics induce this suspension of oxygenation?

"In the cases of all the anæsthetic agents with which we are acquainted, the first manifest effect is upon the circulation of the blood. The heart-beats increase in frequency and in force. This fact is proved as well by actual experiment as by common observation. I have also proved that a primary effect of anæsthetics is, besides an increase in the rapidity of the flow of blood, a contraction of minute systemic arteries.

"It is evident, therefore, that anæsthetics at the early stage of their action are excitants of the cardiac and vaso-motor nerves. I need not stop to state the intimate relation which must subsist between the absorbed anæsthetic and those nerve-structures which Dr. Beale's researches have shown to ramify amid the ultimate structures of the vascular net-work.

"From these causes, which concur to produce an increased impulsion of arterial blood, a secondary effect is produced, which I believe has much to do with the superinduction of the state of anæsthesia; an injection of the venous capillaries, a forcing onward of the blood into the venous channels, and hence *a disturbance of the normal relations subsisting between the arterial and venous system.*

"If we pursue our investigations further, we find that, after the stage in which there is increased activity, if the flow in the arteries has persisted for some time (that time varying with different anæsthetics), an opposite condition is induced; the heart beats with diminished force, the flow is seen to be pulsatile, the arterial walls become relaxed, and the blood moves with a slow and toiling current. This, however, is not an essential condition of anæsthesia. Anæsthesia in many cases exists while the arteries are yet contracted.

"We come now to these important points: that anæsthetics vary in their action upon the forces of the circulation; that in the cases of alcohol, ether, and especially tetrachloride of carbon, complete anæsthesia occurs, and persists while the afferent blood-vessels are contracted; but that chloroform has the power of producing paralysis of the vaso-motor influences much more rapidly than the other agents, *and that in direct proportion to the concentration of its vapor.*

"And now we become able to explain the apparent paradox of the varying post-mortem appearances in cases of death from various anæsthetics. Alcohol, ether, and tetrachloride of carbon cause a prolonged stimulation of the cardiac and vaso-motor forces; the consequence is, an urging onward of the blood toward the venous channels; thus the venous system becomes loaded, the respirations are enfeebled, death partakes of the form of apnœa, and after death are found turgidity of the veins, accumulation in the sinuses of the cranium, and distension of the right side of the heart with a blackened blood.

"In case of chloroform it is otherwise; its stimulant action is more transient, it may quickly superinduce paralysis of the circulating forces, and that in an inverse proportion to the dilution of its vapor with air. Freely diluted, its stimulant action is prolonged, but concentrated, it is evident that the vapor becomes a rapid paralyzer of the sympathetic, and the post-mortem signs are exactly those of syncope.

"By an argument which I fear has proved wearisome I have now arrived at a point which I wish strongly to place before you.

"The usual course in investigations on anæsthetics has been to analyze the results of practice and common observation, to build up opinions upon opinions, and to promulgate doctrines *solely* on the basis of actual experience. By such means I acknowledge that results of the highest value have been arrived at. But in this paper I have reversed the process. My aim has been to establish by experiment and analogical observations a sound pathology, which I believe to be the only standpoint for a sound therapeutics. We can thus test the fallibilities of theory by the test of experience and the fallibilities of experience (for these in biology are undoubted) by the test of theory. The point, then, on which I wish to insist is this: that theory and practice, experiment and experience, combine with the records of actual cases in the past to prove that strong atmospheres of chloroform suddenly paralyze the motor influences of the circulation, while dilute atmospheres act with a comparative benignity.

"Concurrently with the action of anæsthetics on the motor powers of the circulation, they possess an influence upon the blood itself. This influence is proved (1) by Dr. George Harley's experiments detailed in the *Philosophical Transactions*; (2) by my observations on the change in form and integrity of the blood-corpuscles induced by the several anæsthetic agents; (3) by the alterations in the color of the blood which have been noted noted; (4) by the argument from analogy which states that carbonic acid and carbonic oxide, both of them agents which induce narcotism, act powerfully upon the blood-corpuscles.

"The conclusion appears to be that though all anæsthetics tend to impair the integrity of the blood, and to cripple its physico-chemical properties, they do so to different degrees and in different ways—some, as ether and carbonic acid, distending them; others, as carbonic oxide, emptying them. The cause, therefore, is various, but the effect the same, viz.: disturbance of those normal changes in the blood essential to perfect life.

"Time will not permit me to investigate the other concurring causes of the state known as anæsthesia. I hope I have proved that the doctrine which asserts that anæsthetics act in virtue of an electric affinity for the brain is an assertion unconfirmed by a single proof; but that the correct explanation of their action is that they, being absorbed and projected throughout the system, act by modifying the state of the circulation, and by suspending by the physical effects of their presence the vital endowments of the blood. Their chief danger is that they shall produce a paralysis upon the circulating powers, but this danger, by the choice of proper agents, can be averted.

"The course of our investigation, then, this evening, has led to two conclusions—one, that to relieve the pains of natural labor only small doses and the early influences of an anæsthetic are necessary; and the other, that these conditions can be fulfilled with no depression, but with even an exaltation of the forces of the circulation."—*Med. Times.*

ART. IV.—ON ARTIFICIAL FECUNDATION.

Dr. Girault, of Paris, lately read an essay before the Medical Society of the Pantheon, entitled "A Study on Artificial Generation in the Human Race," an abstract of which we translate from the Wiener Medical Presse, May 1: He recalled the experiments of Spallanzani, Holler, and others, which in a number of instances had proved successful, while in others they had failed. As far back as 1839 he had been consulted by a married couple, the wife 25 and the husband 27 years of age, who, although in apparent good health, had been united five years and were still childless. Dr. Girault used a glass syringe, and injected some of the spermatic fluid of the husband into the uterus. After repeating this on three separate occasions, she became pregnant, and was delivered of a healthy boy. The child died of croup when four years old, which his mother regarded as a punishment upon her for the method in which he was conceived, and refused to submit to another artificial conception;

In 1840, a musician called on Dr. Girault, on account of childlessness, resulting from hypospadias. His wife was 24 years of age and healthy. Dr. G. threw some of the spermatic secretion into the uterus on the 27th of August, and on the 30th of the following March she was delivered of a healthy girl.

A man, sixty-five years old, married to a wife of twenty-seven years, had passed seven years without offspring. The pair applied to Dr. Girault, who, after four failures, succeeded so completely on the fifth attempt, that in nine months afterward the lady was delivered of a pair of twins, one boy and one girl. The latter died after three months, but the former survived and was healthy when last heard of, at the age of nine years.

Dr. Girault reports in all twenty-seven attempts at artificial procreation in the human female, of which ten were successful, and others doubtless would have been, if the couples had been more persevering in their efforts, and allowed him to continue his endeavors.

The only instrument necessary is a uterine catheter with a funnel-shaped opening at the external end. Into this the sperm is placed, after the point has been introduced into the cervical canal, and blown into the cavity of the uterus. Proper care must be taken that the instrument is of the temperature of the body, and it is important to convince oneself that the semen contains active spermatozoa, with long and rapidly vibrating tails, as the latter is the sign of their fecundating power.—[*Med. and Surg. Reporter.*

ANALYTICAL DEPARTMENT

"Qui e nuce nucleum esse vult, frangit nucem."—PLAUTUS.

ART. I.—ANALYSIS OF VARIOUS ARTICLES. Published in the Medical Times and Gazette, the British Medical Journal and the London Lancet, etc. (Original copies.) By PROF. JAS. M. HOLLOWAY, M.D.

Successful Treatment of Uterine Catarrh by Internal Application of Carbolic Acid.—Dr. W. Playfair, at King's College Hospital, has been quite successful in the cure of uterine catarrh with the agent named above. He cites three cases, selected because each one of them had been treated assiduously by the ordinary methods without success. He thinks that old standing cases are hopeless unless applications are made directly to the seat of the disease, which is the lining membrane of the uterus. Before making the application the os and cervix should be widely dilated.

"As a rule, there is no difficulty in passing the probes, as in true uterine catarrh the os is invariably patulous. As the case improves the patulous state of the os diminishes, and this is found to be one of the most certain signs of improvement."

The carbolic acid, a concentrated solution of eighty parts to twenty of water, can be readily applied by means of fine probes of whalebone or flexible metal around the point of which a thin film of cotton is wrapped, to the entire lining membrane of the uterus. The remedy should be applied about once a week; after the first application the discharge usually increases, but after a second and third marked diminution occurs, not only in the quantity discharged but also in the size and irritability of the womb.

Mrs. Winslow's Soothing Syrup.—No. IV of a series of patent medicines that are being published in the Medical Times and Gazette gives the following as the composition of the above widely known nostrum; one bottle of the syrup contains—cane sugar, 26.8 grammes; absolute alcohol, 2.2 grammes; oil of aniseed, traces; water, 30.0 grammes. The active ingredients are the oil of aniseed and alcohol. No morphine nor mineral matter could be detected.

Reproduction and Reunion of Divided Tendons.—The Times and Gazette for March 19, 1870, gives the following conclusions by M. Demarquay upon this subject, as the result of his own investigations:

1. That tendon is regenerated by proliferation of the elements which are found at the internal surface of the sheath of the divided tendon, its two ends being retracted. 2. That the external portion of the sheath takes no part in the process, except that the vessels which it supports become more voluminous and more numerous. 3. The proliferation which takes place at the inner surface of the sheath does so at the expense of the cellular elements of the latter, which, at the end of eight or ten days, becomes confounded with the cellular elements which spring from the extremity of the divided tendon. 4. The regeneration of the tendon is rapid in

proportion to the vascularity of the divided tendon. Thus, while the tendo Achillis is repaired in twenty or twenty-five days, the tendo patellæ requires a longer time. 5. The phenomena which lead to the reproduction of tendons are in every respect similar to those which occur in the reproduction of bone by the periosteum. 6. Histological examinations have confirmed the deductions from physiological experiments. 7. In this memoir further illustrations are derived from facts in pathological anatomy, and the subject of the suture of tendons is clinically and experimentally examined. The general result, derived from observations made on man and animals, is that sutures of divided tendons do not give rise to satisfactory results except when they are executed by means of very fine needles and very thin threads, when union takes place by means of the proliferation of the cellular elements, and when a considerable length of time has elapsed.

Treatment of Diphtheria by the Saccharate of Cubebs.—This remedy was introduced by M. Vrideau, and has been employed recently in quite a number of cases of diphtheria and croup by M. Bergeron, of the St. Eugenia Hospital. The saccharate of cubebs was given to the amount of twenty grammes during the day, no local treatment being resorted to. The false membrane was gradually dissolved, the duration of the disease not exceeding ten days. The success following this remedy was very encouraging. The *rationalè* of the treatment is not given.

Nitrate of Amyl in Angina Pectoris.—At a meeting of the Clinical Society of London, February 11, 1870, Drs. Lander Brunton and Francis Anstie, each reported a case of angina pectoris promptly relieved by this drug The relief followed immediately the characteristic symptoms of the physiological action of the remedy, "*i. e.*, the flushing of the countenance and the amplification of the pulse."

"Dr. Anstie believes that amyl is a relaxer of spasm in all involuntary muscular fibre and that it would be particularly useful in colicky affections."

Spiritus Chloroformi instead of Spts. Chloric Ether.—A pharmacist, in a letter to the Lancet, on uniformity of prescribing, suggests the importance of prescribing the former of the above drug in place of the latter, because there is no regular formula for preparing the spts. chloric ether, the spts. of chloroform, *per contra*, containing uniformly one part of chloroform to twenty of spirits.

Buttermilk in Rearing Infants.—Dr. A. M. Ballot, of Rottendam, in an elaborate and carefully prepared article on the "Food of Infants" gives his experience of the employment of buttermilk. He states that a large number of his colleagues, whose practice lies more amidst the children of the middle and poorer classes are totally won to the buttermilk in preference to the ordinary diet used as a substitute for mothers' milk or as an addition to it, when not nourishing. When a child has taken too much mothers' milk or cows' milk and vomits, the ejected matter contains fibres of coagulated casein, which is not the case when buttermilk has been taken. The coagulation in the mother's and cow's milk is due to the acids of the stomach and rennet. But the buttermilk is already acid and being, therefore, already half digested, is more readily retained in the stomach. The following is the mode of preparation: "The manner in which the buttermilk food is prepared is this: "To a pint (litre) of buttermilk is added a spoonful (0-16 gramme) of wheat flour. When once it boils, it must be kept so not longer than some minutes; the pap must be very thin. Sugar is added to every portion the child uses, so that it may have sweet taste. To a pint of milk are added 8 or 10 decigrammes of sugar. I attach no importance to the addition of wheat flour or meal, and would omit it totally because often there is added too much, and I believe that the utility of the food lies in the buttermilk itself; but then the cook says that when buttermilk is boiled alone it will separate; also with wheat flour the pap is nicer than with wheat meal, otherwise the last would be better. That the buttermilk should boil is necessary, were it only to make inoffensive the added water, which is perhaps of a bad quality. When the child has a little diarrhœa rice meal is often added instead of wheat flour."

(4)

CLINICAL RECORDS.

"Ex Principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—LESSONS FROM THE MEDICAL CLINIC AT THE "HOSPITAL DE LA CHARITE," GIVEN BY S. JACCOUD, Assistant Professor to the Faculty of Medicine at Paris, Physician to the Hospital St. Louis; Chevalier of the Legion of Honor; Corresponding member of the Royal Academy of Science of Lisbon, and of the Medical Societies of Berlin, Vienna, Wurzburg, etc. Containing 29 Wood-cuts and 11 Chromo-lithographs.

[Translated by Dr. J. D. JACKSON, of Danville, Ky.]

Example of a Complex Lesion of the Heart—Distinction between Souffles by Propagation and Souffles Originating in Place—Signs of Aortic Insufficiency—Diagnosis of Pure Insufficiency and Insufficiency with Narrowing of the Orifice—Signs of Dilatation of the Ascending Aorta.

Graphic Character of the Pulse in the Principal Lesions of the Heart—Effects of Inocclusion of the Aorta upon the Intra-cardiac Circulation—Necessity and Mechanism of the Compensation—Secondary Mitral Insufficiency—Symptoms and Treatment of Incomplete Compensation—Symptoms and Treatment of Exaggerated Compensation—Action and Indication of Digitalis—Of Cafeine.

Of Rupture and Compensation in Aortic Insufficiency—Of Sudden Death.

[Contineud from August Number.]

It is more than 15 years since, as I have said, that this woman contracted her cardiac lesion, and during this long period, experienceed no other inconvenience than from palpitations, frequent attacks of bronchitis, and a little swelling of the malleoli when she was more than usually fatigued during the day. But these light accidents, never obliged her to take her bed, it is only to-day, that her heart has put her in the attitude of a patient, and indeed, for fifteen years she has borne without impediment, her aortic insufficiency; then, at one blow, this lesion, mute until now, has spoken, and developing by sudden explosion, the totality of accidents which it had held subservient to it, it has plunged this woman into the grave state which was described to you at the commencement of this conference.

How has this come to pass? Why has this storm arisen after fifteen years of calm? Such is the question I wish to examine. It presents itself in the same terms for all the organic lesions of the heart, and you can easily apply to other cases the special information of aortic insufficiency.

The preceding question divides itself into two problems; How is it that the lesion produces no accident? Why is it, that this immunity is only temporary?

To the first question, the response is easy, it will present itself to your mind, if you will think of the disorder which the inocclusion of the aortic orifice will bring into the mechanism of the intra-cardiac circulation. At the moment of the ventricular diastole, when the blood-wave compressed by the contracting aorta ought to escape all entire towards the periphery, the sigmoid valves remain open, and a portion of the wave necessarily falls back into the ventricle which it has just been in the act of quitting; the quantity and force of the reflux are due to the diameter, the insufficiency, and the systolic energy of the artery. Well, suppose things to continue in this state, suppose no new condition to come up to compensate for the effects of this disorder, the circulation will be soon at a stand-still in the cardiac cavities, and the heart cease to beat. Call well to mind, that which takes place. The left ventricle has a determined capacity, say 10; but following the inocclusion of the aortic valves, it is not 10, which it ought to contain, but it is 12 for example; so then, if nothing changes, if the primitive capacity of the ventricle remains the same, it cannot give place to this very considerable quantity of blood; consequently, the left auricle can no longer empty itself completely, and the stasis gains nearer and nearer the right cavities by the intermediary veins and pulmonary arteries, until the distension or rather to say the eccentric pressure of the liquid enclosed in the cavities exceeds the contractile power of the heart, in which case the organ stops before the obstacle which it cannot overcome. Consequently, for the unfortunate effects of aortic occlusion to be compensated, it is necessary before all, that the vessel should remain distended, that it should dilate in such a manner as to be able to hold this superabundant wave; it is necessary in a word, that the volume of the containing organ, should become adequate to that of the fluid contained. It is in effect, what happens, and the dilatation of the left ventricle, is the first means of compensation for the aortic insufficiency.

But this is not sufficient, and limited to this resource, the compensation will be ephemeral. Let us return to our numerical figures. Observe the left ventricle dilated, in a condition to contain 12 instead of 10; but if its propulsive power rests equal to 10, that is to say, if the contractile force of the muscle can drive into the aorta a wave of but 10, the situation will not be of the best, despite the compensation. The burthen is 12, the power is 10, it is evident that there would be a residum of 2 in the ventricular cavity, and as these remainders add themselves by each systole in arithmetrical progression, the passage of the blood from the auricle into the ventricle will be soon fettered, and you will have the full complement of the effects of cardiac lesions not compensated: the defective propulsive power causes the arterial tension to become lowered, and consequently diminishes or suppresses the secretions, notably that of the urine, all the while that the obstacle to the evacuation of the auricles increases the venus tension, whence the dropsies and the congestions of all sorts. The secondary disorders produced by the organic lesions of the heart, have no other cause, than this reversal of the tension of the arterial and venous systems respectively. In the normal state, that of the first prevails over, and very much, that of the second; in the pathological state which we are studying, the difference is effaced, or exhibits itself inversely, the striking phenomena of the asystole, and of the cardiac cachexia, have no other pathogenetic condition; whatever the seat of the lesion of the heart, the moment that it is not compensated, it acts by the same mechanical diminution of arterial tension, and augmentation of venous tension; I repeat it, these are both there. The dilatation of the left ventricle then, cannot suffice for a durable compensation. It becomes absolutely necessary that the propulsive power be augmented in a parallel degree; if the ventricle contains 12, it is necessary that it should be able to impel 12, and this condition is realized by the hypertrophy and hypergenesis of the muscular tissue. The propelling instrument augments its force the while that it augments its capacity; from this the compensation is established; it can continue for years. Dilatation and hypertrophy of the left ventricle, there is the solution of our first problem: how happens it, that the lesion produces no accident?

When the compensation thus established is perfect, that is to say, when there exists a just proportion between the dilatation and ventricular hypertrophy on the one part, and the volume of the retrograde wave on the other part, the lesion is literally mute, those who are affected do not suffer, they are not sick. But the compensative work does not always attain, nor does it always respect, these favorable limits. It can remain on this side, it can go beyond; incomplete in the first instance, it is exaggerated in the second.

I understand by incomplete compensation, that which being very powerful in preventing the asystole properly so called, permits nevertheless, the development of certan accidents more or less serious. I would not stop on this particular point, if it could not give rise to a grave error in therapeusis—and here is how it is. These accidents are accesses of palpitation, more or less frequent, a tendency to *deliquium animi* (*lipothymic*) in the erect position and especially on passing suddenly from the lying down position to that of standing up; there are besides vertigoes, ringings in the ears, dimnesses of vision, and the face ordinarily pale, is invaded many times in the day by sudden flushings of which the patient complains especially, calling them flashes of heat (*bouffies di chaleur*). With this aggregation of phenomena, the physician finds the pulse ample and bounding, from aortic insufficiency, and if not prevented, he receives for a certainty, the interpretation which the patient does not fail to suggest to him, he attributes to an habitual cerebral congestion, the symptoms observed. He directs his treatment with this view; if he is thoroughly convinced, he insists upon general bleeding, and is all surprise, at perceiving the powerlessness of his efforts; the more he struggles to extinguish this 'persistent congestion, the more do the accidents become aggravated, the pulse is more and more bounding, the palpitations augment, as does the disposition to syncope, soon the ventricle affected in its nutrition, can no longer propel the blood wave, the asystole comes on; the compensation was but incomplete, the treatment has annulled it. And why? Because the famous congestion, the reputed source of all the evils, does not exist, because the symptoms experienced by the patient, are due to cerebral anæmia. The compensation is not perfect, that is to say, the propulsive force of the ventricle is not exactly proportional to the volume of the wave to be moved; it is then, the encephalic circulation which ought to suffer first, for the blood to gain the head, moving against the force of gravity, the full action of the heart is necessary. Hence the faintnesses (*lypothymies*) on standing erect, the vertigoes and dimnesses of vision, and hence the bad effects of a spoliative treatment.

Very far, then, from following the deceptive indications furnished by the pulse, it is proper to demand of other symptoms the true cause of the accidents observed: You will note, then, that the impulse of the heart is feeble, the pulsations less energetic; you will seek in vain for the arterial quiverings and boundings, and you will finally observe that the phenomena most painfully prominent to the patient, are less marked, or not at all so, while he is lying down. By such signs you will recognize the feebleness of the ventricular contraction and the imperfect compensation. What is necessary in such a case is a tonic and eutrophic medication, aided by a strengthening regimen. The extract of bark, in the dose of from two to three grammes daily, the ferruginous preparations, red wine proportioned to the habits and condition of the individual—such are your best means of action; in analagous cases I have many times demonstrated the efficaciousness of this treatment to which I am disposed to add the use of—an infusion of quassia; a cup of a morning on an empty stomach. This substance excites organic contractility, and this property, which recent investigations have made us aware of is of substantial efficacy. Coffee and tea can also render important service by the excitant action which they can exercise over the nervous system. In those individuals in whom the aortic insufficiency is imperfectly compensated, the usual accidents sometimes take on an alarming violence. One then can not always attain the effects of such rather mild medication as the preceding, it is necessary to resort to stimulants more energetic and prompt:

Ether, Hoffman's anodyne (in doses of ten to twelve drops, repeated according to the effect produced), the acetate of ammonia (four to eight grammes in 120 grammes of a julep sweetened, with ether), and finally the ammoniacal spirit of sylvius* (thirty to forty drops in an infusion of mint), are then particularly indicated. Once that the accidents are improved, there should be a cessation of the use of these excitants, and a return to the tonic medication, wisely regulated to combat the cause of the danger—the imperfect compensation.

Exaggerated compensation presents quite another tableau: strong impulsion and violent beatings of the heart, throbbings of the arteries of the neck and limbs, pulse bounding and vibrating, face flushed, headache habitual, roaring in the ears and insomnia, frequent hæmorrhage, and especially epistaxis—such are the principal traits, such the pathological complexities. They are those of what is called active hypertrophy, but the aortic inocclusion indicates a different treatment.

Despite such striking phenomena of arterial fluxion, it is not good to bleed such cases. After the momentary relief produced by the emission of blood, the situation is exactly the same with reference to the mechanical disorders, because the blood drawn is almost immediately replaced by water. You have then gained nothing in this respect. On the other side, on creating an artificial hydræmia you risk the enfeebling of the heart beyond measure, and hasten the appearance of the disorders of nutrition, which, sooner or later, ought to bring about syncope. Finally, you do not know but that your patient is one of those who fall into syncope by a simple bleeding, and this consideration ought to suffice to check you; for if syncope is always grave in organic diseases of the heart, it is still more so in aortic insufficiency than in all the others. It is, then with reason that venesection is excluded from the treatment of this malady. At the most it is indicated as a temporary remedy for the immediately threatening symptoms, central or pulmonary congestion, for example, or free hæmorrhages.

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*Prof. Bouchardat assigns to this liquor the following composition: Fresh orange peel, 96 parts; citron rind, 96; vanilla, 32; canella, 16; cloves, 8; sal ammonia, 500; carbonate of potass, 500; eau de cannelle, 500; alcohol, 31° carb., 560.

For combatting the exaggerated compensations and excessive action (*hyperkinésie*) of the heart, it is necessary to resort to those means the action of which, though mild, is more durable and less dangerous. Repose of body and mind, an abandonment of work and fatiguing pleasures, a gentle regimen, composed almost exclusively of milk, of vegetables, and white meats, that is the hygienic treatment; divers pharmaceutic agents can second these effects. They are: Medicinal hydrocyanic acid (twelve drops in 150 grammes of distilled unsweetened water), Prussian blue or the cyanuret of potassium (in the minimum dose of one gramme a day).

Twice in the past have I established under such circumstances the utility of this last medicament, the special sedative action of which does not appear to me to be sufficiently known. Finally the heroic agent is digitalis. The best mode of administration is, I think, the infusion of the leaves, in the dose of 50 centegrammes to a gramme, and even one gramme and a half, per day, to 125 grammes of water, which one can sweeten with 30 grammes of syrup of digitalis, so as to make a potion of 150 grammes, which can be administered by spoonfuls during the twenty-four hours. Under the special circumstances which we study now, the action of this substance is certain. Often from the first day the heart's pulsations are less violent and the oppression, as a consequence, less painful; the pulse quiets down and loses its vibratile character, and at the end of 48 or 72 hours the patient experiences a considerable amelioration. The effect is more striking still when the cardiac pulsations are in the meantime irregular and violent, but this is rare in aortic insufficiency pure. Do not, however, rest in a false security. Like every powerful agent, gentlemen, the digitalis has its dangers, which it is necessary to recognize. Perhaps you will give at first a too strong dose; perhaps you will prolong the administration of the maximum dose I have indicated beyond measure, and you will pass suddenly from the therapeutic to the toxic action, and then this is what you observe: With or without gastro-intestinal phenomena, with or without cerebral accidents, the pulse becomes small, rapid and depressible; the phenomena of venous stasis appear, the foci becomes cyanosed; in a word, you have an artificial asystole, which, if it is prolonged, will as certainly kill your patient as spontaneous asystole.

There has been and is still yet much discussion touching the mechanism of these accidents. The pathogenetic interpretation varies necessarily according as the *par vagum* nerve is regarded as a nerve of arrest or a moderator of the heart, or rather as an excito-motor nerve, and also according to the part ascribed to the sympathetic in the innervation of the organ. Very happily this uncertainty is without importance, for if we do not know just what is the modification of the nervous system which substitutes the toxic for the therapeutic action, we know perfectly what are the disorders produced in the circulation by this primordial modification, and knowing that, we are fully informed upon the artificial asystole from digitalis. It is to Traube that is due the knowledge of this important fact. By delicate experiments the celebrated Berlin professor has established the fact that digitalis, in massive or toxic doses, has for its effect the sensible lowering of arterial pressure and the increase of frequency of the heart's beatings*; that is to say, that digitalis acts then in the same fashion as the non-compensated cardiac lesions, all the effects of which, as you will recall, have for their point of departure the reversal of the normal pressure in the two parts of the circulatory system. It is not, then, astonishing that the symptomatic phenomena should be the same in the two cases.

This being so, you may conceive that the treatment by digitalis exacts an incessant surveillance. Once the sedative or therapeutic effect obtained, it is necessary to examine the impulse of the heart and the force of the pulse many times daily, and to also take into account the mode of respiration and state of the face, and on the first sign of feebleness or cyanosis to suspend the medicine or diminish the quantity. This examination ought to be repeated at short intervals, because with individuals who take the digitalis for many days continuously the toxic effects generally appear with a sudden abruptness. In this delicate situation one ought not to deprive himself of any element of perception, and I enjoin upon you to estimate daily the quantity of urine. This criterion is certain; it has never deceived me. So long as this secretion increases under the influence of the medicine, so long as it remains back to its normal quantity, it can not go beyond its strict limits, there is no danger; but if the regimen and the medication remaining the same, the quantity of urine voided in 24 hours diminishes anew, and tends toward the original quantity which it presented at the beginning of treatment, oh! then be, certain that the arterial pressure has commenced to fall

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*Traube. Ueber den Zusemmenhang der Herz-und Nierenkrankheiten. Berlin.
Compare:
F. Muth. De Digitali purpurea. Kilæ, 1839.
Stamius. Archeiv fur physiolg Heilkunde.

the artificial asystole is approaching, it is necessary to stop. This sign sometimes preceding all appreciable enfeeblement of heart and pulse, it is why I so much recommend it to your consideration.

As a consequence of I don't know what theory, aconite has been vaunted as a succedaneum to digitalis, but the experience of Van Praag has proven this medicine absolutely unreliable; it is wise to renounce it. It is not the same for cafeine, which merits a positive place in the therapeutics of diseases of the heart. Under the influence of this medicine administered in pills in the dose of 25 centigrammes to a gramme a day, the hearts impulse gains force, the beatings become regular, and as a necessary consequence the urinary secretion augments. When the patient to whom the cafeine is administered is under the stroke of a marked asystole, the effects obtained can be easily followed and measured by means of the sphygmograph, which ought always to be employed in such a situation, if one wishes to render an account of what occurs. Cafeine has then an action similar to that of digitalis, but according to what I have seen, this action although as prompt, is less energetic. The tracings, 11 and 12, permit us to appreciate the effect of digitalis in that man in St. Charles ward, affected with constriction and mitral insufficiency. The two drawings here, demonstrate to you, the positive action of cafeine. They are taken from the same patient; the digitalis was suspended for eight days, a necessary precaution for a new experimentation, since it is observed that the effects of the remedy continue afterwards for at least two or three days. During the three last days of these eight the accidents of asystole delared themselves anew, the pulse resumed the irregularity and feebleness which it presented on his entrance into the hospital; however, it could be registered with the instrument, and tracing No. 13, represents it for you.

Fig. 13.—*Patient of figures* 11 *and* 12, *in systole.*

Soon after the drawing had been obtained, I caused the patient to take 16 centigrammes of cafeine, in four pills, at two hours intervals; twelve hours after the last dose, the pulse presented other characteristics.

Fig. 14.—*Same patient after ingestion of* 16 *centigrammes cafeine.*

The irregularity is less, and especially is the amplitude of pulsation, that is to say, the force of the cardiac impulsion visibly augmented. We have besides another proof. The patient had only voided 200 grammes of urine during the forty-eight hours preceding the administration of the cafeine; after taking the 16 centigrammes, he urinated during the same length of time 400 grammes, and when the dose had been carried to 30 centigrammes the quantity of urine amounted up to 700 grammes. The cafeine, which ought to be given under the form of citrate, has then incontestibly an effect, and of the same kind as digitalis, but the effect is less marked; compare figs. 14 and 12, and you will see that the pulse has assumed much more force under the influence of digitalis; furthermore, the effects of the cafeine do not persist after the suppression of the medicament, and for these reasons, the digitalis merits the preference. But, as there are patients who because of a peculiar susceptibility of stomach, cannot tolerate this substance, it is important to be clearly informed on the parallel properties of cafeine.

The aortic insufficiency, and in diseases of the heart, very generally, there exists no other indication for the digitalis than that which I am exposing to you; a sedative and regulator par excellence of cardiac activity, this remedy addresses itself exclusively to the following symptoms; *hyperkinêsie* or ataxia of the heart. Digitalis besides acts upon the secretion of the urine, the quantity of which it augments; but this, however, is a secondary effect, simply resulting from the regularisation of the beatings of the heart, and the augmentation of arterial pressure.

The indication for digitalis, does not exist in our patient, and for remedying the mechanical disorders of the circulation, we have employed drastics and tonics; you have been able to establish the efficacy of this treatment. The amelioration produced, will it be durable, this is another question; we will return to it in an instant.

However perfect may be the compensation of the cardiac lesions, it is temporary; the artificial equilibrium by means of which it maintains a circulation nearly normal can endure for years, but it follows that it must be broken, and that is fatal; the muscular tissue of the heart attains along with its sudden nutrition a regressive transformation, generally fatty, and when this secondary alteration, of which Paget and Stokes have shown the full importance, presents a certain extent, the ventricle, although augmented in volume, although hypertrophied in appearance, no longer contains enough contractile elements to face the excessive work which the lesion imposes upon it, the propulsive force diminishes, it emptied itself badly, the evacuation of the venous system is as a consequence restrained, the compensation is destroyed, and as this rupture results from an anatomical condition upon which we have no hold, it follows that the heart stops, and the patient succumbs. As for the time which is necessary for this transformation of cardiac tissue, it is impossible to indicate any limit; there is observed on this subject the most surprising varieties; the seat of the lesion, and the power which the obstacle presents to the course of the blood, certainly pass for something, but the principal reason of these differences ought to be sought in the vital conditions of the patient, in the mode of his nutrition, and by consequence something in the treatment to which he is subjected.

The preceding conditions are applicable to the generality of organic lesions of the heart, but in aortic insufficiency, an especial condition comes in to favor and hasten the fatty, or fibro-fatty transformation of the contractile elements.

The heart receives the blood destined for its proper nutrition, by the coronary arteries, and by a single exception it is not at the moment of ventricular systole that these vessels present their utmost repletion. When the blood is propelled into the aorta by the contraction of ventricle, it is thrown forward in a direction perceptibly perpendicular to the coronary orifices, it passes beyond this orifice without entering it; it is thus with difficulty that the nutrient arteries of the heart, receive a small portion of this systolic wave. This condition, which exists in every individual, is yet aided in a great measure, by the relative situation of the coronary arteries and the sigmoid valves. Generally, indeed, the orifices are very near the initial ring of the aorta, so that the valves redressing by the systole, apply themselves against them, and cover them, in which case it is very certain that the nutrient arteries do not receive blood at the moment of contraction of the ventricle. During the diastole on the contrary, anything unites to assure an abundant irrigation of the heart. The sigmoids are lowered and the retrograde blood wave stopped by these valves, does not find issue except in the gaping coronary orifices, largely opened to receive it; it in part precipitates itself, the repletion of the arteries is complete. To resume, the nutritive irrigation of the heart is principally accomplished, I will not say solely, at the moment of the ventricular diastole; the pressure of the retrograde blood column, is the most potent agent in it.

Such being the normal mode ot nutrition of the heart, it is easy to foreseo what profound perturbation inocclusion of the sigmoid aortic valves will bring about. One part of the aortic column reflows into the ventricle at the moment of diastole, this is one reason for the coronary wave being directly diminished; out in addition to this, the issue abnormally open to the blood by the hiatus of insufficiency, lowers considerably in return the pressure of the blood column upon the open coronary orifices; now, this pressure in return of the aortic blood being the *vis a tergo* which moves the coronary blood, the aortic insufficiency has finally, these two effects, which observe: diminution of the coronary wave, and a diminution ot the pressure which causes it to circulate; in other terms, the heart receives less blood, and that which it receives, has a less pressure than normal. The nutritive process is thus affected in its first condition, and it becomes less active. This not all. The diminution of volume and of wave pressure in the coronary arteries, has as its necessary effect, a slackening of the course of blood in the veins ot the same name. It in the same way, produces with the radicals of these veins, in the capillary net work intermediary to the arteries, interstitial stases, which augment without useful effect, the volume of the heart, and limit the free interchange of material, which is the supreme act of nutrition.

To this cause of trouble, it is proper to add another, which acts in the same sense, this is the abnormal pressure exercised upon the capillaries of the heart at the moment of diastole by the superabundant wave, which distends to its maximum, the left ventricle.

Thus fettered in the initial act preparatory to bringing to it, its liquid nourishment, fettered in the final act which constitutes the exchange of material, the tissue becomes so altered that the nutrition of the heart becomes fatally insufficient.

Studying muscular tissue in general, Billroth has shown that it tends to transform itself into connective tissue, when nutrition is compromised, and certain contributions of Traube, have confirmed these ideas of the heart; it is not then a pure fatty degeneration which results, as Paget and Stokes have thought, it is rather a fibro-fatty transformation. The development of these alteratives is very often hastened by a myocarditis contemporaneous with the endocarditis which has produced the valvular lesion.

The *carneæ columnæ* naturally participated in these disorders, and finish by undergoing atrophy themselves, which compromises directly the play of the auriculo-ventricular valves. My learned friend, Bamberger,* of Wurzburg, advances the opinion, that in aortic insufficiency, the *carneæ columnæ* are always hypertrophied; Traube, on the contrary, describes them as being constantly elongated, flattened out and atrophied. It appears to me, that these opposite opinions are perfectly reconcilable; all depends on the period of the observation. In the beginning of compensation, the *carneæ columnæ* hypertrophy as the rest of the left ventricle; later, when the lesion has induced the nutritive alterations, I have made known to you, these muscles also, like it, are themselves affected, and become atrophied. It is then that there is produced a secondary mitral insufficiency which is assuredly one of the most curious traits of this history.

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* **Bamberger, Lehrbuch der Krankheiten des Herzens. Wien, 1858.**

Since the hypertrophy of the ventricle and the *carneæ columnæ* progress *pari passu* with the dilatation, the respective dimensions of the mitral orifice and its valves remain the same and the closure of the opening is perfect. But when the hypertrophy ceases to give place to nutritive aberrations, when the valvular muscles submitting to an abnormal elongation, commence undergoing atrophy, when in a word, the dilatation gains the ascendant, the diameter of the mitral orifice augments in the same proportion as the ring enlarges, and as the valves preserve their first dimensions, there is a defect of proportion between the membranous laminæ, and the opening which they ought to close; the occlusion is incomplete, a mitral insufficiency is established. When then, in a patient whom one knows to be affected with aortic insufficiency without mitral lesion, there is seen to appear a souffle in the first time at the apex, without antecedent acute disease, he may be certain of the formation of a mitral insufficiency by increased dilatation of the left ventricle. This incident, is one of bad augury, since it denotes a trouble of compensation, but it does not indicate an immediate danger. Often on the contrary, in the early days of this second period, there is observed a favorable change in the mode of the circulation, and consequently in the state of the patient; indeed the mitral insufficiency opens a way of escape to the wave which surcharges the ventricle, and it comes in aid of this last, in diminishing the sum of its work; the ventricle opens itself more easily, the auricles dilate in their turn, and this new phase of compensation, can retard for a very long time, the accidents of confirmed asystole. By reason of the considerable dilatation of the heart perceptible in our patient, I think the mitral insufficiency we observe in her, is precisely a secondary lesion of this kind.

When the compensation of a cardiac lesion is compromised, the prognosis is grave—observe this general fact; but this gravity is not, however, always the same and for coming to a certain opinion, it is necessary to take into account the conditions in the midst of which the equilibrium is broken. I will explain myself. If this rupture can be attributed positively to some incidental cause, an effort for example, in one unaccustomed to fatigue, a bronchitis or another malady capable of impeding momentarily the circulation already compromised, then the prognosis is less serious, the derangement of the compensation is an accident, this is not the result of the natural evolution of the cardiac malady, and it is permitted to hope that once the additional cause has disappeared, things will return to their primitive state; this hope is well founded when it is the first time the compensative equilibrium is destroyed. But, if the disorders develop themselves without a perceptibly temporary cause, the prognosis is absolutely grave; the asystole is then the direct result of the modifications undergone by the tissue of the heart, and the mechanism can no more be repaired, because the immediate agents of compensation are destroyed. Two lessons flow out of these facts: in presence ot a patient with asystole complete or incomplete, the physician ought to exercise all his care in seizing the possible occasional causes of this perturbation, and on the other hand the patients with compensated lesions ought to be plainly warned by him of the fatal consequences of fatigue of all kind, errors of regimen, and taking cold especially.

With our woman, the rupture of the compensation has evidently been the effect of two occasional causes, excessive fatigue and obstinate bronchitis. You have seen quietude, and an appropriate treatment do justice to hsee accidents. Nevertheless, I do not think that this patient can be put back into the state of health she enjoyed before her entrance into the hospital; she is sixty-nine years of age, she has always lived amid bad surroundings, her lesion dates back fifteen years at least, the dilatation of the ventricle has produced a secondary mitral insufficiency, the aorta itself is dilated and other motives, and I am convinced for these reasons, that the nutrition of the heart's tissue has been for a long time compromised, and that the asystole has only been moderately hastened by the extensive influences which we speak of. I do not think that the compensation can be completely reëstablished; observe that of the four weeks this woman has been in our service, there are three of them at least, during which the grave symptoms which she presented primitively are dissipated; all goes well while she is in bed, but when she gets up, the dyspnœa comes on, the face becomes cyanosed, the limbs swell, the heart can not execute its work so well as when in the horizontal position, therefore, I hold the patient as lost. She would certainly die in a few days from this, if she was obliged to stand during the day; repose can prolong her existence a little, but, it is this, and this alone, that is the sole hope of which I can conceive.

I can not quit this subject, without pointing out to you the frequency of sudden death in aortic insufficiency. There is no disease of the heart but what is liable to this unforeseen termination, but it is never more to be dreaded, than in inocclusion of the aortic valves, and I expressly recommend to you the reading of the remarkable work which my friend and colleague, Doctor Mauriac has devoted to this point of pathology.* Retain well this fact: every patient affected with aortic insufficiency can be struck dead suddenly, when the compensation is not perfectly exact. The mechanism of this accident is very easily seized: the ventricle is dilated and enfeebled, do not forget; under the influence of an effort, a moral emotion or any other cause acting upon the innervation of the heart in a direct way, or by reflected effect, the ventricle, suddenly arrested, does not contract, then the double blood-wave, that of the auricle and that of the aorta is precipitated into its cavity, which it distends, the altered muscle has not sufficient force to react, the halt of a second, becomes an endless paralysis, a *lypothemie* a mortal syncope. The cases of Williams, Elliotson, Hope, and others besides, prove the fact itself, and the interpretation which I have given you. Often, indeed, the arrest of the heart happens without appreciable occasional cause; the ventricle forgets itself an instant, and surprised, and overcome by the blood which distends it, cannot recover its mobility, it ceases to beat, the patient is dead.

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* Mauriac, De la mort subite dans l'insuffisance des valvules sigmoids de l'aorte. Thèse de Paris, 1860.

An abstract from Aran, permits approximatively an estimation of the comparative frequency of this termination of aortic insufficiency; in an hundred and thirteen cases of sudden death by diseases of the heart, this able observer has established the fact that in twenty-five cases there was a lesion of the aortic valves alone, in nine other cases, a simultaneous lesion of the valves and aorta. This then is thirty-four cases to the hundred and thirteen imputable to alterations of the aortic orifice.

This peculiar danger, inherent to insufficiency of the aorta, is of a high practical importance; it creates for the physician an obligation in which he ought not to fail; it is proper in such a case, that he should make them aware of the actual peril, always menacing the life of the patient; we have no other means of disengaging ourselves in advance of responsibility.

Three months afterwards, this patient died, and the autopsy made by my friend, Dr. Pierreson, who temporarily filled the office of chief of clinique, confirmed in all respects, the diagnosis which had been made. The heart hypertrophied, presented a considerable dilatation of the left ventricle; the aortic insufficiency was complete; the aorta sensibly dilated in its ascending portion, was patched with atheroma; the mitral valves roughened unequal and rigid, could no longer close the open orifice.

ART. II.—PERINEAL FISTULE. By Dr. H. McGUIRE, of Richmond, Va. Reported by Dr. J. M. UPSHUR.

Case No. 8.—D. M. æt 31 years, farmer, from Caroline county, Va., was admitted Nov. 18th. He has an opening in the perineum, through which a stream of urine escapes during each act of micturition.

He states that during an attack of gonorrhœa, three years ago, an abscess formed in the perineum. This was opened by his physician, and the urine immediately began to escape from the wound, and has continued to do so ever since.

The opening is on the right side, and is surrounded by a large mass of granulations. With some little difficulty Dr. McGuire passed a No. 4 silver catheter into the bladder; a stricture was found in the membranous portion of the urethra. After the catheter was introduced, a probe was passed through the fistulous opening. and touched the catheter lying in the urethra. The fistulous track was thus measured, and found two and a half inches long. The day after this examination (Nov. 20th), Dr. McGuire dilated the urethra to its natural size, introducing first No. 4 silver catheter, and afterwards, in succession, Nos. 5, 7, 8, 10 and 12. No urethral fever or other trouble of consequence followed this operation. On the 23d the urine escaped in a large stream from the urethra, but at the same time through the fistulous opening.

Nov. 27th—The granulations around the fistulous opening were removed with the knife, and the mouth of the fistule slightly enlarged with caustic potass. The whole track of the fistule to its entrance into the urethra was then cauterized with nitrate of silver. This was done by means of a silver probe covered with the caustic. The resident physician was then directed to pass the catheter for this patient whenever he desired to perform the act of micturition. For this purpose he was to use the gum-elastic cacheter, and endeavor to teach the patient how to pass it for himself. The man was told that the success of the operation depended upon having the catheter always passed before micturition, and that if any urine was permitted to come in contact with the urethra it would interfere with his cure. His diet to be light, but nutritous. He was not to be confined to his bed or room during the treatment, but at liberty to walk about the hospital, or grounds attached, if he desired.

Nov. 30th—The patient has learned to pass the catheter for himself, and faithfully follows the directions.

Dec. 4th—A few drops of urine escape through the fistule, while the catheter is in the bladder, or immediately after it is withdrawn. The catheter used is a No. 10. The man is directed to lie on his left side as the urine flows from his bladder, hoping, as the fistule is on the right side, gravity may prevent the urine from coming in contact with it: and as the urine escapes through the catheter, to apply firm pressure to the perineum. This is done by means of a ball of yarn. He is also told to close the end of the catheter with his finger, before it is withdrawn from the bladder, and thus keeping the air from entering it, to prevent the escape into the urethra of the few drops of urine left in the instrument.

Dec. 6th—No urine by fistule, which is now closing.

Dec. 18th—Fistule entirely closed. Directed to continue the use of instrument for a few days, when he was discharged.

Jan. 1st, 1870—Returned, as requested, for examination, and fistule found entirely closed. Advised to use catheter occasionally to prevent return of stricture.

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

ROME, GA., August 15, 1870.

DR. E. S. GAILLARD—*Dear Sir:* I trust you may feel that I compliment you when I give expression to my great *surprise* at the notice taken of Babcock's Patent Supporter in your August number.

A year ago I subscribed for your Journal, chiefly because I desired to encourage a Southern enterprise that I felt was creditable to us. During the year I have learned to welcome its monthly visits to my office, and now I part company with it, I assure you, with feelings of regret.

Heartily approving, as I do, both the principle and the policy of discountenancing patent medicines and patent instruments, I feel that I do wrong to aid in supporting a journal that endorses either in its columns.

I am aware that our medical journals sadly need pecuniary support, and that the venders of these patent wares distribute their ill-gotten gains liberally to the press, hence the greater necessity the profession should take a strong stand against the growing evil, and in support of such journals as firmly withstand the tempting offers.

Respectfully yours,
ROBERT BATTEY, M.D.

COMMENT.—The feelings aroused by this letter must (as all readers will allow) be of such a character as to almost preclude a temperate reply; but, as the questions introduced and the objections alleged are important to the whole profession, a few lines at least will be devoted to a just and even generous response.

Every one, on reading this remarkable communication, (a communication whose tenor places it beyond the pale of privacy), will feel that the Pharisees have not dwelt only in Judœa, and that he who cried, "I thank God I am not as other men are," though in person dead, is in spirit fully alive. The temptation to amplify here is great, but this comment is intended to meet objections which others may have made to the publication of a etter so offensive to the sensibilities of this distinguished Roman, and while it would be natural under such provocation to reply fully to his letter, this privilege is surrendered. In doing this, it is of course impracticable to notice suitably the unction with which this immaculate correspondent alludes to his august patronage. Such patronage amounts in profit, annually, to little more than a dollar; but to read his allusions to it, one would naturally conclude that the patronage of Mœcenas for the classic Horace, or that of Cæsar Augustus for the noble Cicero, were absolutely contemptible in comparison. But such considerations must be abandoned for those of immediate interest to the general public: a record of humble appreciation having thus been made in behalf of this munificent patron of medical literature.

It may be seriously doubted whether the ruling of the profession in repudiating all who receive a patent for a surgical instrument or appliance be not grossly faulty in conception and injurious in results. The only objection made to the resort to a patent, under such circumstances, is that a generous and noble profession should give the results of its ingenuity and thought for the benefit of the sick and unfortunate; that these should reap fully and without charge the benefits of professional ingenuity and industry. It might be replied that it is questionable whether the medical profession is more charitable than any other body of educated men, and that there is a stain of arrogance in an assertion, so familiarly and pleasurably made by physicians. Granting, however, the preëminent charity of the medical Body, and a grave and most important question arises: whether the use of the patent system among medical men, in connection with surgical instruments and appliances, would not so stimulate ingenuity and and mechanical experimentation as to have the general public infinitely more benefitted than it has ever been previously? The practical man accepts the world as he finds it: this constitutes the difference between himself and the Utopian dreamer. A practical view of this subject is the view adopted by practical men, and practical legislators, in connection with other avocations. Reasoning thus, it is certain that nothing has so benefitted the poor as the labor-saving machinery of the present day, and this has been chiefly invented because the inventor was sure of a competent reward. Destroy the system of patents which secures to all men, but physicians, a reasonable reward for their ingenuity, and the teeming halls of the Patent Office would be at once deserted; the great wheel of mechanical progress would be arrested; and the many labor-saving machines, bringing increased comfort to the poor and needy, would cease to spring from the toiling laboratory of the inventor's brain. It is, in the judgment of the writer, almost a certainty that the patenting of surgical instruments and appliances would increase rather than in any respect diminish the comforts of the poor in their sickness and affliction, and it would give remunerative employment to thousands in and out of the profession, who are now practically idle and socially unremunerative.

Granting, however, the contrary of this, that the patenting of instruments is monstrous, and that those who make such instruments known (if this noble patron at Rome be the judge) are equally monstrous, how many of the best and purest in the medical ranks would remain unscathed, unrejected and undespised of men? Who else but this pure and distinguished Roman conld "cast the first stone?" How many medicines, whose composition is now well known, were prescribed by the best and truest in the medical ranks, long before their composition was known? The educated physician knows well that many of the most familiar compositions now found in the Materia Medica were constantly prescribed before their composition was even suspected. It is useless to record the list; it is a long and historic one, and one too familiar to the educated physician. So much for medicines. What are the facts in regard to surgical instruments and appliances? How many patent body-braces, spinal apparatus, abdominal supporters, etc., are in frequent use by the most distinguished physicians of this and other countries; these instruments being advertised with letters testimonial from the most learned and fastidious members of the profession, and often commended editorially by the best journalists of the age? How often has even this distinguished dweller at Rome read or seen such testimonials from distinguished physicians of this and other cities, published in this Journal? It was but in February, that a patent instrument (Dieulafoy's Aspirateur) was not only described, but illustrated in the pages of this Journal, and described also in almost all of the American journals.

In this number of the Journal, Professor Holloway removes the stigma from Mrs. Winslow's Soothing Syrup (a nostrum as notorious in Europe as it is here) by relating, on the authority of the English Medical Times and Gazette, that it contains no morphine or deleterious substance; and Dr. Eustace Smith, a practitioner of unblemished personal and professional character, advises in this number for the chronic diarrhœa of infants, "Liebig's Patent Concentrated Milk Diet." Such are the results manifest after this very brief examination of the subject.

If others can and do give such testimony, is it inadmissible for a journalist to do so? If reputable members of the profession do this, is it not the duty of the journalist to do so? Is it not a portion of his duty to give information on this and kindred subjects? It is utterly futile then for any one, even as irreproachable in character and record as this censor of the Press, to assert that he will not, by his patronage, "encourage" a journal which furnishes such testimony; it is sheer nonsense; and did not a distinguished *savan* of Louisville assert, that "my people do not gush any more," the sentiment expressed in this letter would be styled (if the writer could reconcile himself to the use of such slang), mere "bosh" and "gush." It is too trivial and foolish to justify further "comment."

To the portion of the letter italicised, it is impossible to reply. Such an insinuation could not have emanated from any one having the smallest sense of justice or propriety. The French have a trite aphorism applicable to all such persons: "*Honi soit qui mal y pense.*" The facts are that "the vender" of this supporter is an advertiser and pays for his advertisement even less than the amount paid by several for their advertisements, and his "tempting offers" have no other existence than in the censorious brain of this unhappy and suspicious correspondent.

The statement made in the original letter of the editor of this Journal to Dr. Painter was thoroughly simple, viz: that he (the editor) was called upon for testimony in regard to a supporter which he was advertising, but that he desired to give testimony thoroughly impartial, and as it was to his interest to retain this advertisement, his testimony to a certain extent might not be accepted as fully impartial; but whatever might be the objections alleged or not against his own testimony, he preferred as an interested party, not to give it. This testimonial was asked for publication, and whatever might be its nature, the giver of the testimony was assured, that it would be published. The views of Dr. Painter were of course unknown, and it was believed that, if this supporter were but fractionally as valuable as it was represented by many to be, that an editor would be discharging a part of his duty (as a disseminator of facts) to make it known; if it were not valuable, it would be equally desirable to publish the fact. That Dr. Painter would give his views impartially and fully, was well known, for personally and professionally his record is as correct as any one in the Profession, with the single exception of the Roman physician whose views are so interesting and whose expression of them is so preëminently courteous.

The statement, it is thus seen, was simple in the extreme, but there are certain persons in every avocation in life who believe themselves far more astute than their fellows, and who are constantly making a foolish noise over some alleged discovery. This peculiarity of organization is not confined to the human family; it is found equally often in the brute creation. All hunters know that in every pack of hounds there is to be found some noisy whelp which is constantly "finding," as the hunters term it, and making always a racket foolish, peculiar and characteristic. The whip of the driver speedily makes a reformation in these canine reprobates. In the human family, this vice can not, of course, receive the same correction, but there is a method which can and must be used to compel such offenders to abstain from unpleasantly thrusting upon one their alleged and foolish discoveries: their noisy and silly "findings."

NOTE.—When an editor refuses offers of advertisements, tendered with the proviso of an editorial notice, the reading public can, with difficulty, imagine the indignation created by a letter containing such gross and revolting insinuations. E. S. G.

HOPKINSVILLE, KY., August 11, 1870.

Our observations in regard to the soporific influence of hydrate of chloral in maniacal excitement might not be uninteresting to the readers of the Journal. A large class of the insane, during their more excited periods, are unaffected, frequently rendered more violent by morphia. In such cases chloral, in proper dose, has never failed, in our hands, to induce within a few minutes after administration profound and protracted sleep. We subjoin a few cases for illustration:

Case 1.—Mr. J. L. æt. 48, chronic mania; noisy, violent, and emaciating considerably from continued sleeplessness. Morphia had been repeatedly given, with the effect of only increasing his excitement. Chloral, at first in thirty-grain doses, was tried for several consecutive nights, quieting in some measure the violence of the patient; not, however, inducing sleep. Sixty grains, since administered, induced sleep within fifteen minutes after it was taken. Forty-five grains, now, procures nightly, refreshing sleep of ten hours' duration.

Case 2.—Mr. N. B., æt. 25, acute and violent mania; noisy and sleepless. Fifty grains at first induced, now forty grains of the chloral secures, regulary, prolonged and refreshing sleep.

Case 3.—Miss B., æt. 20, acute mania; violent and sleepless. Morphia in large, and frequently repeated doses, had been given, with the effect of increasing her excitement. Chloral, in forty-grain doses, procures sleep.

Case 4.—Mr. W. K., æt. 45, chronic mania; violent, noisy, and much emaciated from loss of sleep. Forty-five grains of chloral regularly secures a night's sleep.

Patients do not awake, from the sleep induced by chloral, with headache, nausea, loss of appetite and indisposition to exertion—feelings which so generally succeed the exhibition of morphine. On the contrary, they awake refreshed, in good spirits, with good pulse and good appetite, the physical energy and strength in no way impaired.

In more than twenty cases, with whom we have used the chloral, several for forty and fifty consecutive nights, we have not seen, in a single case, the slightest evidence of tolerance, as so generally attends the exhibition of morphia, and is an objection to its continued use.

Where opium, by itself, is not admissible, and the effects of choral transitory, (cases of this description have been reported), Dr. Rodman, our Superintendent, suggests that, if the chloral be administered with the opium the usual hypnotic effect of the latter medicine may possibly be secured.

We have never observed nausea to succeed the administration of chloral.

There has been no occasion, since we commenced the use of chloral, for its employment in melancholia for insomnia. B. W. STONE, M.D., Asst. Physician.

MADISON PARISH, LA., August 1, 1870.

I offer this short communication, not because of anything new or strange contained therein, but simply as a mite of statistical evidence in the treatment of epilepsy with the bromide of potassium.

My patient, a white male, æt. 23 years, has suffered with epileptic convulsions for fourteen years—the paroxysms coming on at irregular intervals, some daily and sometimes as long as twenty days elapsing between them. His mind is very much impaired. I have witnessed two of the paroxysms: they were pathognomonic. His mother, in giving a history of the case, spoke of nothing unusual in such cases. He has been treated by a number of physicians, at different times, with little or no effect.

I was first consulted in reference to the case in September, 1869. I prescribed bromide of potassium, grs. xv. thrice daily, in sweetened water. In two days my patient said he felt better. He continued doing well, and was free from convulsions until the middle of January—nearly four months and a half—when, after omitting his medicine for a fortnight, he had one paroxysm. He immediately recommenced using the same prescription, and he has had none since. In February, sometime, he was troubled with frequent vertigo, and had an "odd feeling" which he could not describe. I increased the dose of bromide to 20 grs. thrice daily, which relieved the symptoms in two days. He is now using the following: ℞.—Potassii bromidi, ʒxi; aqua puræ, ℥xvi; sacchari albi, ℥iss. *M.* Sig—tablespoonful thrice daily.

His relief was more rapid than I expected, and its duration gratifying to all concerned. I will report progress at the end of another six months.

Very respectfully,
Chas. P. Whitehead, M.D.

Near the Plains, Va., August 3, 1870.

Dear Sir: I wish to verify a theory as to a violent and fatal disease produced at the adjacent city of Salem and neighborhood, by a large drove of Texas cattle, brought in during June and the early part of July, and grazed on the commons of that village, and some of the neighboring farms. These cattle came in covered with ticks, distended with blood, which in due time dropped from the cattle, and soon after the bodies of these ticks burst, each one giving vent to thousands of animalcular ticks, which filled the grass. Soon after these cattle were all sold and carried away, the cows began to be sick, and all have died, not leaving one to the villagers; and one farmer, alone, who took some three hundred of them to graze when they first came to the neighborhood, has lost about a thousand dollars' worth of his home stock.

Wherever these Texas cattle have been carried, after the ticks dropped from them, no damage has ensued.

I am satisfied that the fatal inflammation of the lungs, stomach, bowels, kidneys, etc., that characterizes the disease, is produced by these animalcular ticks, and report these interesting facts for the information of the curious and interested. Yours truly,

ROBT. E. PEYTON, M.D.

FORT LAPWAI, 1870.

* * * * * * *

Aside from a somewhat general prevalence of scrofula, these Indians (the Ney Perces) are a very healthy race of people; they have not been visited by epidemics for many years, and resist disease as well as white people. I could not help thinking of a remark made by the senior Dr. Yandell, at one of the meetings of the Medical Society in Louisville, when the subject of scarlet fever was discussed: he said that the disease was almost unknown among the Indians, and on the Pacific coast. He was much in error, for among the white children on the coast it has, for the past ten years, been exceedingly fatal; and among the Indians is a very common disease, and has been, so far as I can learn, for years. I have treated several cases of it since I came here, but all of them were slight. The Indians treat the disease with cold water almost exclusively, wrapping the little patient twice or thrice in the day in a wet blanket. This treatment may interest yourself and the readers of the Journal.

Very sincerely, your friend,
C. R. GREENLEAF, M.D.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex Damnatur cum nocens Absolvitur."

ART. I.—THE INDIGESTION: OR, DISEASES OF THE DIGESTIVE ORGANS FUNCTIONALLY TREATED. By THOMAS KING CHAMBERS, Honorary Physician to H.R.H. the Prince of Wales, etc., etc., etc. Third American Edition Revised. Philadelphia: Henry C. Lea. 1870.

The second American edition of this work, published in 1867, was duly noticed in the review department of this Journal. After an interval of three years the third edition is before us much enlarged and rendered more valuable by the enlargement. In a brief and very modest preface the author states, that he has inserted "upwards of ten dozen cases and has reärranged, indeed, in part rewritten, the comments upon them."

These cases form one of the most interesting features of the work. There are three hundred and fifty-five of them. They have been selected and arranged for the purpose of illustrating the various forms of indigestion. They are taken in part from the clinical records of St. Mary's Hospital, of which the author is senior physician, and in part, from his private prescription book. As evidence of the value of the cases transcribed from the latter, we give, in the authors own language, the manner in which they have been recorded:

"I make it a rule, to which exceptions need be very few, to write all prescriptions and papers of advice in a copying book, which makes a duplicate of them by transfer paper; and at the back of this transcript I write, usually with the patient before me, his history, at least so far as to explain my reasons for the advice, before I go on to the next page. The periodical indexing of these sheets is an easy job for an hour of weariness; and the whole time consumed is so crumbled up that it is never missed, and neither business nor amusement feels itself robbed."

Clinical records kept in this way must necessarily be concise, accurate and truthful; free from those vagueries that are too often found in the history of cases recorded from memory at the close of the day, or upon the discharge of the patient.

In a review of the second edition, a synopsis of the arrangement of the subdivisions of the indigestions was given and reference was made to a few of the peculiar views and to the style of the author. A repetition of these being unnecessary, it is proposed to point out the new features of the third edition.

The following sentence appears in the preface: "A third edition is not yet required in England, so I send the MS. for publication to America:" and we confess that its true import was not fully appreciated without careful reflection and enquiry. Presuming that other readers will experience the same difficulty, the following explanation is submitted: Publishers oftentimes assume considerable pecuniary risk in the publication of works, and it becomes necessary that they should protect their interests by securing a pledge from authors that they will not issue a revised edition until the one already on the market has been exhausted. In this way authors are frequently damaged, both in reputation and pocket, the rapid advancements in all branches of science, rendering a work a few years old incomplete and incorrect. If this be a correct solution of the sentence "not yet required in England," we have reason to congratulate our professional brethren that such a disability does not exist on this side of the water. We might go further and express the regret that the British publishing-house, possessing such a contract with Dr. Chambers, is not willing to submit to a small pecuniary sacrifice for the benefit of the profession at large, especially when the increased value of a third edition would most likely, in the end, fully compensate them for the loss.

In the chapters devoted to the "Indigestion of various foods," we find whole pages rewritten and rearranged. The increased knowledge of the chemical and physiological character of food is fully set forth and minute details as to its preparation is given. For instance, a most excellent recipe for making beef tea is given, which the general practitioner would do well to transcribe and place in the hands of the cook, whenever his patient's general system is in such a condition as to need the blandest, and at the same time the most nourishing food. A "ladder of meat diet for invalids" is also given, by which is shown, briefly, the manner in which the solidity of the patient's food can be increased daily, and at the same time the appetite be tempted by variety.

Many formulas are added, any one of which may be consulted, with profit, not alone by the young and inexperienced practitioner. For instance, he gives twelve different specimens of prescriptions for heartburn, a symptom that is so often encountered, and which requires many modifications of treatment in the same individual.

A want of space prevents a more extended notice of this valuable work. It contains an immense fund of information that will be useful to the general practitioner.

For in treating of the indigestions, the author aims constantly to point out the various affections in which they are most likely to arise; regarding them important, oftentimes, as the indications of what are usually considered as graver disorders, which graver disorders tend to a speedier fatal termination, whenever the *indigestion* of food is not duly appreciated and corrected.

The publisher has bestowed his usual care upon this edition, and it is in every particular unexceptionable.

J. M. H.

ART. II.—THE PHYSICAL EXPLORATION OF THE RECTUM; WITH AN APPENDIX ON THE LIGATION OF HÆMORRHOIDAL TUMORS. Illustrated by numerous drawings. By WM. BODENHAMER, A.M., M.D. Wm. Wood & Co. New York. 1870.

This is a neatly gotten up pamphlet of fifty-four pages, issued since the first of July. Dr. Bodenhamer, in our opinion, stands at the head of the list of authorities upon all affections of the rectum. He has been engaged in the observation and treatment of them for over thirty years, and during that time has familiarized himself with the opinions of the most eminent surgeons in the world. That he is a close student and a man of independent thought, is fully shown by a careful study of his work on anal fissure. We confess that his sound views upon that affection completely revolutionized our own of its pathology and treatment; and we have been gratified at the results in the past year of those cases treated by his plan, remembering, with no little regret, how we formerly maimed our patients unnecessarily by either cutting or rupturing the sphincter.

There are few surgeons or physicians who are not willing to acknowledge to a want of familiarity with the anatomy of the lower portion of the alimentary canal and its pathology. Very few of them are capable of making a careful and complete exploration of the rectum. They were not taught in the lecture room, and we know of no text book that treats, exhaustively, of it. The pamphlet of Dr. B.'s has fully supplied this deficiency. He compares the views of various authorities upon doubtful points in anatomy—*e. g.* the presence of sacculi above the sphincters—and after weighing the value of each, records his own views, based upon careful and frequent dissections. He furnishes drawings of the various instruments needed for thorough exploration of the rectum and describes graphically the mode in which they must be manipulated. Altogether, this part of the pamphlet is a success in supplying a conscious want to the profession.

The chapter upon the ligation of hæmorrhoids is a striking one and full of encouragement, not alone for the sufferer from that disease, but also for the surgeon. He asserts confidently, and somewhat dogmatically, that the patient need not be confined to the bed, not even to his room, during the treatment; that the severe and agonizing pain resulting from the ligation of the tumors, by the method usually recommended in the text-books and adopted by the profession, can be avoided by a full knowledge of the anatomy of the parts and an observance of the rules laid down by him. We have no doubt that the doctor is correct; for his reasoning, based upon experiments and upon anatomical investigation, is good.

The author opposes the drawing out of the tumors by means of a hook or vulsellum, to facilitate their ligation, and suggests the employment of the speculum when they are situated so high up that they cannot be protruded by the act of defecation; at the same time, he says; they can be easily ligated by means of a speculum, with *suitable instruments.* He does not give the reader even a slight hint as to the character of these "suitable instruments." This is the only objectionable feature of the chapter. We are charitable enough to suppose that the Doctor presumed too largely upon the mechanical talent of his professional brethern. Such a presumption is not warranted in the preparation of such a monograph.

We feel satisfied that this very cheap pamphlet will prove a valuable addition to the library of every one of the subscribers. J. M. H.

ART. III,—MEDICAL DIAGNOSIS. By J. M. DA COSTA, Lecturer on Clinical Medicine and Physician to the Pennsylvania Hospital, etc., etc. Third Edition, revised. Philadelphia: J. B. Lippincott & Co. 1870. 1 vol. 8vo. pp. 844.

This work was first published in 1864, and the fact that it has reached a third edition testifies to the favor with which it has been received. The author seems to have intended it chiefly for the use of advanced students and young practitioners; but we would suggest that they will find the careful study of a complete and comprehensive work on practice and of monographs much more profitable, and hence, greatly to be preferred. While the present volume is in many respects superior to Barclay's work on the same subject, yet it must, after all, be classed with Mendenhall's Vade Mecum, Neil & Smith's Compendium, and kindred productions. Such works will probably always find a ready sale among a certain class of medical students and young practitioners; but not among those who willingly devote their time and earnest labor to the acquisition of the highest and best medical knowledge. Whether or not, the author's aim to furnish one more guide or hand-book, may merit unreserved commendation from those who have the true interests of medical literature and of the medical profession most at heart, the work has been and will, no doubt, continue to be popular; it is probably the best of its kind; its faults are such as must flow from an effort to isolate "diagnosis" from other subjects necessarily involved in the consideration of any disease, and from the efforts to compress into comparatively small space, a subject so great and important as to be coextensive with the domain of practical medicine.

The book is well gotten up; the illustrations are good and original, and the present revised edition is about 150 pages larger than those preceding it. J. A. O.

ART. IV.—SOME CLINICAL OBSERVATIONS ON THE MALIGNANT DISEASES OF THE UTERUS. BY FORDYCE BARKER, M.D., Professor of Clinical Midwifery and Diseases of Women in the Bellevue Hospital Medical College, etc.

This pamphlet was printed for the Academy of Medicine of New York by Messrs. Wm. Wood & Co., and contains about thirty pages 8vo. Any one at all conversant with the literature of the subject is aware how widely authorities differ on almost every important point relating to malignant diseases of the uterus.

Every contribution embodying, like that before us, the results of a rich experience, must therefore be gladly received; and when, like Dr. Barker's paper, it contains within the small space of thirty-two pages, so large an amount of important and trustworthy observations, it becomes doubly valuable. The author first devotes some remarks to the comparative frequency of malignant diseases in city and country districts, and arrives at the same conclusion as Walshe and Registrar General Farr, viz: "That a town life is far from exercising any serious influence on the production and mortality of cancer.

The increase of cancerous affections of late years he regards as apparent, not real; the error being, probably, due to the oversight of a fact which no one will deny, "that progress in the facility and certainty of diagnosis demonstrates the more frequent existence of a disease."

Dr. Barker believes that the negro race in this country enjoy comparative exemption from cancer, and in this he is upheld by Drs. J. C. Nott and Marion Sims, and Professor Chisholm, whose letters he publishes in his pamphlet. It is possible that cancerous affections may be more frequent among the white population than among the blacks, but I do not believe the latter are so fully exempt from these affections as these gentlemen seem to think. I have seen at least eight cases of cancer in negroes, in the course of eight years practice in this city. In six of these there was cancer of the uterus, one had scirrhus of the breast; the eigthth case was a negro man who had an epithelioma of the leg.

In regard to etiology the author finds that the disease is hereditary "in but a small minority of cases." In this he is borne out by the statistics of Lebert, West, Sibly and Scanzoni, beside 487 cases of his own, in which only 36 had had cancerous ancestors. He says, "a vitiated constitution—whether it be hereditary or acquired—whether it be tuberculous or cancerous—may predispose to the development of cancer. All the other causes which authors have assigned as predisposing to this disease amount just to this and no more. He considers the etiology of cancer as unknown, and declares that science has, up to this time, failed to explain what are the causes of this special form of heteromorphous development. Consumption was frequently reported to have been in the family of his cancerous patients.

In 372 cases of cancer Dr. Barker found that phthisis existed in the family of 92, or 1 in 4. Sibly found phthisis in the family of 48 out of 130 cases of cancer, or 1 in 2.7.

These figures recall very forcibly what Christieson stated many years ago: "The malignant diseases belong to the scrofulous constitution. Consumption in early life and malignant disease at a later age seem not unfrequent in the same family.

The comparative frequency of the different forms of cancer is a question upon which the greatest diversity of opinion prevails. Scirrhus was formerly thought to be the most frequent form, and many hold this view even now, but there can be no doubt that scirrhus of the uterus is quite rare; the author considers it among the rarest. Colloid is also very rare, and the author has seen only one case in which the diagnosis was confirmed by a post mortem examination.

The classification of his cases is based upon his recognition of the distinction between cancer and cancroid of the uterus. The comparative frequency of the different forms was, according to Dr. B.'s record, as follows: Cancer of the uterus, 487; cauliflower excrescence, 18; corroding ulcer, 6; recurrent fibroide, 3. As the author has found scirrhus and colloid cancer of the uterus extremely rare, we suppose his 487 cases were mostly of the medullary form; but among them must have been not a few which, having commenced as epithelioma, assumed at a later stage a more malignant type. The proportion of cases of cauliflower excrescence seems to have been very small, but this may be explained by what has just been said. According to Sir James Simpson, cauliflower excroscence is the most frequent form of uterine cancer, and we believe he is right. The cases of corroding ulcer are more numerous than the extreme rarity of this form of cancroid would have led us to expect; but the author says, "the diagnosis was based entirely on the clinical aspect of the cases." Some very interesting remarks on the symptoms and diagnosis of uterine cancer then follow, and a number of highly interesting cases bearing on these points are related. Want of space alone prevents us from mentioning several of them.

Malignant diseases of the uterus, according to Dr. B.'s observations, appear to have pursued a slower course than is commonly supposed to be the rule; and in this respect his experience has been different from that of others who are mentioned by him. The average duration of Lebert's cases was a little over sixteen months; in Dr. West's cases it was fifteen months; and Simpson fixes the limit between two years and two years and a half; Dr. Barker's cases had an average duration of three years and eight months.

It is to be regretted that the duration of cauliflower excrescence and corroding ulcer was not noted separately from that of the more malignant forms, as this has an important bearing upon the prognosis in these cases as compared with that of cancer.

The remarks on the prognosis in cancer of the uterus are especially noteworthy, and several illustrative cases are of great interest.

The treatment suggested by Dr. Barker involves no new principle or remedy, yet it is an important part of the paper, and conveys a just rebuke to those who act as if nothing can be done either to cure the disease or to prolong or palliate the existence of the patient.

Dr. Barker's paper is both instructive and interesting, and thoroughly practical. We regret, that its compass being so small, the author has been unable more fully to elaborate his subject. It is to be hoped he will speedily follow up these "Clinical Observations" by others equally well timed and acceptable.

J. A. O.

MISCELLANEOUS.

„Non Omnes Eadem Mirantur Ament Que."

Lancing the Gums in Dentition·—H. Gibbons, M.D., in the Pacific Medical and Surgical Journal, says: "There are three objections to scarifying the gums: First, the pain and struggling of the child; second, the increased difficulty of teething arising from the cicatrix; third, the danger of hæmorrhage.

"As for the pain, it is trifling and unworthy of notice. The consequent relief is much more than sufficient to counterbalance the pain. Often the itching of the gums is so intolerable that the impression of the lancet is agreeable. I have known a child to close its jaws on the instrument and press it into the gum with evident satisfaction.

"The struggling of the child, and its fright, are of greater importance, especially if the operation be bunglingly done, as is often the case. There is but one right way of doing it. Take your seat behind the child as it rests on the nurse's lap in a proper light, and placing your knees toward its back, draw its head down between your knees. Let the nurse hold the infant's hands. What with your knees and your two hands, the head is now completely under your control. Grasp it between your two palms, and as it opens its mouth to cry, thrust one or two fingers of the left hand in its mouth to keep the jaws apart, and use the lancet with the other hand. By this method you have the most perfect command of the head, and can cut exactly in the spot and to the extent you desire. I am thus precise in the description, because I have so often seen the operation so awkwardly undertaken as to fail of its purpose, and to endanger serious wounding of the child's mouth.

"Some writers have recommended cutting down on the outside of the gum, toward the root of the tooth, and not on the ridge, in the perpendicular direction, toward the crown. If the gum be much swollen, and the tooth deep, this plan may answer.

"In some cases it is sufficient simply to relieve the distention by scarifying, without cutting down to the teeth. The loss of a few drops of blood in this way is often eminently useful, aside from any topical effect.

"The second objection, viz: the cicatrix, is scarcely worth a serious refutation. When we consider that the tooth effects a passage by inducing absorption of the gum through pressure, it is evident that absorption will be more easily accomplished where there is a cicatrix than where the tissue possesses all its original vitality and power of resistance. Repeated incisions, therefore, have an effect opposite to that which the popular mind ascribes to them. By weakening the vitality of the tissues they facilitate the exit of the tooth.

"The idea of induration, as attached to the cicatrix, is probably fallacious. I have never observed any induration of the gums, after scarification—perhaps because they heal so speedily, and are kept constantly moist.

"Finally, we come to the most important objection—the danger of hæmorrhage. This is of rare occurrence. In an experience of more than forty years, during which it has always been my practice to use the lancet freely in dentition, not a single instance has occurred to me. I have heard the same testimony from my father, after forty years of practice, in which he never hesitated to lance the gums of a teething child.

"Nearly forty years ago, this subject was canvassed in the Medical Society of Wilmington, Delaware—of which I was then a junior member. My recollection of that discussion is distinct. Eight or ten physicians were present, some of whom had been many years in service. The practice of cutting the gums was then universal. And yet, not a single case of fatal or dangerous hæmorrhage, from lancing the gums, had occurred to any one of them, and only one case had come within their knowledge. A child named Collins, the patient of a physician then deceased, had been visited, in consultation, by several of those present, and died after a number of days of hæmorrhage.

"But the experience of others is not uniformly of the same tenor. My friend, Dr. Hatch, of Sacramento, in a paper read before the Medical Association of that city, mentions four cases of hæmorrhage following incision of the gums, which have come to his knowledge—all of which proved fatal. In these cases, however, there was preëxisting disease which, in all probability, would have destroyed life, had the gums been left in intact. Further, they had been treated with calomel, until the peculiar effect of that agent on the blood appeared to be fully established. Dr. Hatch infers that the operation should never be performed on anemic children, or on those whose appearance might lead to a suspicion of the hæmorrhagic tendency; and that it should be particularly avoided in patients under the influence of mercury.

"The experience of Dr. Hatch is exceptional, and not to be accepted as a guide, in regard to the trequency of hæmorrhage from this cause. It is extraordinary that so many cases should have fallen under the observation of a single practitioner. There have been deaths from hæmorrhage resulting from the extraction of teeth—perhaps as large a proportion as from cutting the gums. The same may be said of many other minor operations. But such extraordinary accidents are not allowed to deter us from operating, when occasion presents. I therefore conclude that the irritation ot the gums from teething is so much more dangerous, under all circumstances, than the cutting of them with the lancet, as to justify the operation, without regard to consequences."

The Syphilization Treatment of Syphilis.—Prof. Bumstead, of New York, reports in the Medical Journal of Medical Sciences, the results of a number of trials of this method recently made in the Charity Hospital of New York. Our readers will remember that the method was introduced in 1844, by M. Turenne, of France, (whose death, by the way, is just reported) and subsequently received its main support from Prof. Boeck, of Christiania, under the auspices of the Norwegian government. Prof. Boeck has been spending some time in the United States, in the prosecution of his favorite plan, and the experiments reported by Dr. Bumstead were made under his direction. As soon as secondary symptoms appear, the patient is innoculated on the chest with matter from a chancre, and then with the matter from the sore thus produced, and so on till no effect follows the insertion of the virus. Then the virus from a chancre on another individual is put in requisition, and applied in the same manner till its power is exhausted, when a third subject is taken, and so on. As the process is continued, the patient becomes gradually less and less susceptible to the poison, until finally he is completely invulnerable, and at this juncture is pronounced permanently cured. Several months are commonly required, during which the suffering is often very considerable. Professor Bumstead reports unfavorably of the treatment. The patients were of the same opinion, several of them having eloped to escape the suffering. He concludes that "syphilization is not a treatment which can be recommended for adoption."

On the Functions of the Trachea in the Act of Respiration.—Some interesting observations on this point, by Dr. Leven, appear in the just published part of Dr. Brown-Sèquard's Archives de Physiologie. Dr. Leven remarks that up to the present time most physiologists have regared the trachea as an inert conduit for the passage of air. Nevertheless, sudden death has occurred on various occasions during the operation of tracheotomy; and fractures of the larynx have frequently induced sudden death, without any exact physiological explanation ever having been advanced. His observations, however, have led him to form certain conclusions to the effect that the trachea is not an inert tube, but it is intimately associated with the medulla oblongata in its function through the pneumogastric nerves, permitting the passage of air, and therefore, also, the entrance of oxygen, which intermittingly excites the periphery of the pneumogastric nerves, and maintains the medulla oblongata in a constant state of activity. He grounds these conclusions on the facts—1. That a ligature applied around the trachea which effects a slight constriction of its calibre, instantly retards the respiratory movements. 2. A strong ligature, suddenly applied, so as altogether to occlude the passage of air, stops at once both respiration and circulation; sudden death follows, preceded only by one or two convulsive efforts. 3. It is through the pneumogastric nerves that the impression received by the trachea is conveyed to the medulla. 4. This is proved by the fact that if the pneumogastrics are divided before tying the trachea, the application of the ligature does not produce sudden death. The animal then dies asphyxiated by carbonic acid. 5. Moreover, if, after incompletely ligaturing the trachea, the coma of carbonic acid be induced, the respiratory act can still be retarded by tightening the ligature, or may be brought to a sudden stop by occluding the calibre of the tube. 6. These experiments have a direct bearing on various pathological conditions, and upon asphyxia in general, teaching us—7. That we should not confound asphyxia produced by carbonic acid with asphyxia caused by strangulation, nor either of these two with the asphyxia of submersion, since the pathogeny ot each is different. 8. Although doubtless the presence of carbonic acid in the blood is superadded as a cause of death, in the asphyxia of strangulation and submersion it is only a subsidiary and secondary cause. 9. Death by hanging is due to compression of the trachea, from the excitation of the pneumogastric, consecutively to irritation of the bulb. 10. Death by drowning is due to the tact that the trachea no longer receives the oxygen of the air, and hence the pneumogastric is no longer excited; The medulla oblongata consequently remains passive, and life is suspended by the arrest of the circulation and respiration, after the animal has made three or four respirations, induced by the oxygen still contained in the bronchi. 11. Thus it would appear that the asphxia produced by hanging and by drowning rather merits the name of syncope, if the distinction between these two clinical terms could be preserved, and if the greater number of supposed cases of asphyxia were not cases of true syncope of a different kind. Asphyxia by hanging is due to irritation of the bulb; that by drowning to inertia of the bulb.—*Lancet.*

Female Students in Russia.—It is stated in the Medical Times and Gazette that the Russian government has decided to admit women into the Medical University of St. Petersburg, after passing an examination. They are to be taught *apart* from the male students and are limited to a course of study of four years. Those who pass the required examination will receive a diploma as midwife, which confers the right to practice. The wisdom of the Russian government in thus providing for the separate education of the sexes in medical subjects will be highly appreciated by those who comprehend the indelicacy and impropriety of educating them together.—*Ex.*

Medical Co-Education of the Sexes in Chicago.—Dr. Davis announces in the Chicago Medical Examiner that the Faculty of the Chicago Medical College, having tried the experiment of the medical co-education of the sexes for the past year, will no longer receive female matriculants. He states that the ladies were well treated by the young men, and that no serious difficulty occurred, but that patients objected to appearing in the clinic before mixed classes.—*Ex.*

Remarks of Prof. T. G. Thomas before the Medical Society of the County of New York, May 23, 1870, upon a paper read by Dr. J. C. Nott, on Intra-uterine Injection:

Dr. T. G. Thomas, the chairman, was called upon, and remarked: I am the more willing to state my views, because they are so entirely at variance with those I have heard expressed this evening. It requires some boldness, I admit, to take a stand in opposition to such an array of authority and experience as I see before me—a boldness which I could hardly command, were it not that I have strong convictions upon the subject. These I hope are not held without reason, as they certainly have not been lightly formed. The subject has always claimed my deepest interest, not only from its intrinsic importance and the fact that it enters so largely in my daily practice, but also because, as a teacher, I feel the weight of responsibility which rests upon me in guiding the practice of others.

Now, my impression is that intra-uterine injections do not constitute an advance in the treatment of uterine diseases; that they have done, and are going to do, a great deal of harm; and that, though they are popular, their evil results will cause them, after a more thorough trial, to be discarded.

In making such an assertion, I must, of course, sustain it by proof. I commenced the use of intra-uterine applications, both solid and fluid, at least ten years ago. At that time I was extremely fond of them, and treated many a case as endometritis of the body which I should now treat as cervical endometritis. One method which I very often employed was that brought forward by Dr. Lente, of dipping a probe into the fused nitrate of silver, and passing it up to the fundus uteri and around the cavity, so as to cauterize its whole surface. Once, after I had made such an application of the solid nitrate, the patient became dangerously ill with the symptoms of cholera morbus, due entirely to this cause. A year or two later, a lady, who had been for some time under my care for corporeal metritis and endometritis, became discouraged, and at my suggestion consulted one of the best gynæcologists of this city. I saw her again at the end of a week, when she had a phlegmon the size of my fist, in one broad ligament. The inflammation had been set up by the introduction of an ointment of calomel through the canula of Dr. Lente.

I have mentioned these cases where solid applications to the cavity of the uterine body have done injury merely to illustrate the fact that solid applications, which are less harmful than fluid ones, are, when made to this locality, not free from danger. Let us see how the matter stands with the injection of fluids. Dr. Nott has said that the entrance of any injected fluid into the peritoneal cavity cannot produce a serious effect immediately, but time must first elapse for inflammatory action to become established. In this statement I think that the doctor is in error. A case which I saw some years ago in company with Dr. Peters, whom I see present to-night, bears upon this point. The lady was known to have simple ovarian tumor, I think about as large as the fist. Called to her in the night, I found her almost in collapse, saying she was sure the tumor had broken. She was right, and her terrible prostration was due entirely to the entrance of the fluid of this benign avarian cyst into the peritonæum. I recall the case of one of my students, who in lifting a trunk felt something give way, was at once violently collapsed, and finally died of peritonitis. The cause was in all probability a rupture of the vermiform appendix.

My own impression is that, where intra-uterine injection is practiced, a certain number of the cases will die from penetration of the fluid through the Fallopian tubes. This certainly does produce the most intense agony, and the most sudden and fearful collapse. I remember that, while making such an injection, by means of a syringe with a screw-piston, each turn of which forced out a single drop of fluid, when I had thrown but five drops into the uterine cavity, the patient exclaimed: "My God, doctor, you have killed me." Her sudden pain and terror seemed to me due to the passage of the fluid into the peritonæum—nothing else could have been quick enough. She went through a tedious course of pelvic peritonitis, barely escaping with her life.

But it will be said that, in these cases, the cervix was not dilated, and that, had it been so, no evil would have resulted. I reply that the very dilatation, so cooly talked of theoretically, is itself attended by danger. Within a fortnight past I have had one of the most melancholy cases I have ever met in practice. The lady had come to me three months before, with anteversion of the uterus. I had treated her with an anteversion pessary, and now considered that part of the treatment completed. So I told her, "I am to-day going to dilate the neck of your womb, and to do nothing else." I did this at my office, using three of Dr. Peaslee's dilators; and she left for her home at Staten Island, promising to write me. This was on Monday of last week. Tuesday evening I was summoned to Staten Island, where I found the lady with violent pelvic peritonitis, of which she died on Sunday evening. I think the mischief was done by the dilatation of the neck of the uterus. Yet I am very sure that the dilators were passed with requisite skill; for I spend much of my time in this practice, and this operation is one to which I have constant resort.

Some time since, a gentleman wrote me, from St. Paul, Minnesota, that he had known a case where a small amount of a solution of iodine was injected into the cavity of the uterus, and the woman died suddenly of peritonitis.

Now, these are selected cases, I allow; and it is by no means a final argument against any procedure that such selected cases should speak badly for it. The question is very different, however, from that in such a capital operation as amputation of the neck of the uterus, for example, which you enter upon expecting, and the patient and her friends expecting, that there is at least a chance of a fatal issue. Such an operation is justifiable and often imperative, as offering the only chance for life, though it may be a very small one. But, if the woman be suffering simply from some slightly annoying affection, she does not expect to die from the routine procedure you resort to for relief; and you have no right to employ any means attended with such hazard.

Again, I see no necessity for intra-uterine injection. My impression is, that the uterus rarely contains over a drachm of fluid, and that it is an error to represent it as often containing a considerable amount of putrescent discharge. But, if it have within it such fluid requiring removal, dilate the cervix and replace the organ, if ante- or retro-verted, or flexed, and what is to hinder the fluid from coming out? The dilatation itself will accomplish much. Then, in addition, if necessary, give ergotine, or ergot, and general tonics. and, if required, introduce the cotton-wrapped probe. Every one knows the difficulty of removing the plug of viscid mucus from the cervical canal. For this purpose I keep a supply of little bits of sponge, not larger than my finger's end, which, being wet and squeezed, will wipe the canal nicely, and then be thrown away. This done, I see no difficulty in passing up the probe armed with cotton, and painting over the whole internal surface.

For myself, I never use intra-uterine injections, even for the hæmorrhage of abortion. If we know anything about the pathology of uterine hæmorrhage, we know that it should be stopped by closure of the vessels from contraction of tissue of the uterus itself. After delivery we all recognize that the only proper thing to do is to empty out the clots and stimulate the uterus to contraction. And, even after abortion, I look upon the injection of styptics as a bad plan. Take, as an example, a case which came before me a few days ago. A woman had been bleeding for three months after an abortion. It seemed to me there must be something in the uterus to cause the flow; for, otherwise, what is there in an abortion to keep up hæmorrhage for such a length of time? In such a case, you may take it for granted that something has been left behind. The doctor in charge of the case consented to my dilating the cervix and introducing the curette; I took away a number of little bulbous bodies, remains of the placenta—those little granulations which bleed if you look at them, and pour out blood profusely if you touch them with a probe. The next day the hæmorrhage had completely stopped, and within a week the patient's general condition was greatly improved. I mention this not as a case important in itself, but as a type of many where success may be attained by a comparatively minor procedure—for I esteem the use of the curette as a far less grave operation than the injection of the uterine cavity.

I wish it to be distinctly understood that I have been objecting not to intra-uterine medication, by such means as those mentioned by Dr. Peaslee—the brush or probe, for instance—but to the special form of medication by injections; and I include even the injection of warm water, which I think can hardly ever be necessary.

If my remarks have seemed desultory, it is because I have left out a great part of what I wished to say, owing to the lateness of the hour. I have to thank the gentlemen for listening to them; for, indeed, it seemed almost a duty to express myself. My views are the result of careful thought, and I hold them with great strength of conviction. I feel that we shall soon see such unequivocally bad results from intra-uterine injection, that the profession will be forced to abandon it as a customary practice.

Hay-Fever Caused by Vibriones.——Helmholz says, in Virchow's Archives, that since 1847 he has been attacked every year, at some time between May 20th and the end of June, with a catarrh of the upper air-passages. These attacks increase rapidly in severity; violent sneezing comes on, with secretion of a thin, very irritating fluid; in a few hours there is a painful inflammation of the nose, both externally and internally; then fever, violent headache, and great prostration. This train of symptoms is sure to follow if he is exposed to the sun and heat, and is equally certain to disappear in a short time if he withdraws himself from such exposure. At the approach of cold weather these catarrhs cease. He has otherwise very little tendency to catarrhs or colds.

For five years past, at the season indicated, and only then, he has regularly succeeded in finding vibriones in his nasal secretions. They are only discernible with the immersion lens of a very good Hartmak's. The single joints, commonly isolated, are so characterized by containing four granules in a row; each two granules being more closely connected, pair-wise, and the combined length equaling 0.004 mm. The joints are also found united in rows, or in series of branches. As they are seen only in the secretion which is expelled by a violent sneeze, and not in that which trickles gradually forth, he concludes that they are probably situated in the adjoining cavities and recesses of the nose.

On reading Binz's account of the poisonous effect of quinine upon infusoria, he determined to try it in his own case. He took a saturated neutral solution of quiniæ sulph. in water=1 : 740. This excites a moderate sensation of burning in the nasal mucous membrane. Lying upon his back, he dropped 4 centim. of the solution, by a pencil, into each nostril; moving his head meanwhile in all directions, to bring the fluid thoroughly into contact with the parts, until he felt it reach the œsophagus. Relief was immediate. He was able, for some hours, freely to expose himself to the heat of the sun. Three applications a day sufficed to keep him free from the catarrh, under circumstances the most unfavorable. The vibriones, also, were no longer to be found.

The experiment was made in 1867; and was repeated at the first recurrence of the attack in May, 1868, preventing the further development of the attack for that year.—*Scientific American.*

Transformation of the Hydrate of Chloral into Chloroform in the Human Organism.—M. Personne's communication on Chloral, has just been brought before the Academy of Sciences. The results of his experiments point to the transformotion of chloral into chloroform within the human organism. His experiments were conducted in two ways. First, chloral was directly mixed with the blood of an ox; next, the substance was given in toxic doses to a dog, which was slain when in a condition of complete anæsthesia. The blood of both animals was examined, and not the slightest trace of chloroform was to be detected by the smell. But when M. Personne, thinking that the smell of chloroform was necessarily covered by that of the blood, resorted to other means of investigation, he arrived at quite different results. A chemical analysis of the fluid was made, and then it was discovered, by employing the usual means for the detection of chloroform, that a large quantity of chloride of silver could be obtained from the blood which had been directly mixed up with the chloral, and a less quantity from the blood of the dog which had absorbed the substance. As the objection might be made that the chloride of silver does not result from the transformation of chloral and the consequent introduction of chloroform into the blood, M. Personne at once tells us that he could obtain the chloride of silver only when a small quantity of carbonate of sodium was added to the hydrate of chloral. Thus, he says, the alkali in this experiment has alone transformed chloral into chloroform, as does the alkali of the blood. The same results were obtained on examining the residue found in the stomach of the dog; and M. Personne states that absorption through this channel is extremely slow. Examination of the urine furnished no traces of chloroform—a fact which is in contradiction to what Dr. Bouchet has recently observed.

M. Personne has come to the conclusion "that hydrate of chloral does not pass through the human organism without undergoing a transformatiom, but that on reaching the blood it is separated into formic acid and chloroform, which latter substance is subsequently converted into chloride of sodium and formiate of soda, the products of its elimination."—*Lancet.*

Extract of a speech from Dr. Gross: "I was present at an amputation of a hip joint at the Philadelphia Hospital. There were four hundred men present, and among them sat nine young women, witnessing without a blush the exposure of the person, and spectators of an operation which they would never be called upon to perform. It was a prurient and itching curiosity which called them there—nothing else. In another clinic a man was introduced in a nude state, covered with syphilitic sores, and the young women present witnessed it again without a single blush.

"We are living in an age of progress. We, on this side, are regarded as 'old fogies.' I appeal to the gentlemen if I have not always been in favor of progress. [Applause]. Certainly it is an age of progress, as is a railroad locomotive in a state of progress when it runs off the track, which can scarcely be called an improvement, although it is progress. So the tendencies of this Sorosis and its offshoot, this female doctor business, exhibit progress, but progress downwards and to the destruction of the best qualities of women and of the social fabric.

"Now, in regard to the colored man. I love the colored man, and I sympathized with him in bondage. But allow me to say, in passing, that his master, to my knowledge, always treated him well. I lived in a slave State for many years, and never saw but two or three cases of cruelty. The negro is now studying medicine. A delegate said yesterday that he would glory in associating with him. So we must some day. We must look the thing in the face, black as it may appear. [Laughter and applause].

"But the agitation of this subject is by men who have a political interest in the matter, men who do not love the negro half as much as I do, men who would sacrifice the white man and the white woman in behalf of the negro. [Applause]. What has the negro done to entitle him to recognition by the medical societies? Has he shown any capability of scientific attainment? Has he contributed anything to medical science? He has not. He is merely pushed forward, as I said, by politicians whom I hate and despise. It is time enough for them to ask for admission when they have made some progress."

Diet in Certain Surgical Cases.—It is now many years since the extirpation of bone with a view to its reproduction by means of the periosteum was first practiced, and is now a tolerably frequent operation. In the *Abeille Médicale*, M. André Sanson gives his brother surgeons a hint as to the diet most suitable for patients under such circumstances, so as to hasten their complete recovery. In zootechny, it is by particular kinds of food that the maturity of cattle is hastened. The fodder which is richest in calcareous phosphate is the best suited for the purpose, because that is the chief constituent of bone. The seeds of graminacous, leguminous, and oleagineous plants are given with this view to the young animals, which thus, as it were, become older than their real age. To apply this principle to man is now the question. The food of cattle being of course unsuited for the human race, we must examine what alimentary substances fit for it will best answer the purpose of favoring the reproduction of bone. Now beans, peas, lentils, and such like leguminous seeds contain upwards of 0.82 per cent. of phosphoric acid, and are therefore to be recommended as the best diet in cases of the above description. Bread, which is such an important element of food in France, requires to be specially mentioned. We have often stated in these columns that the whitest flour, although so pleasing to the eye, is far from being the most nutritive. Wheat flour does not contain more than 0.40 per cent. of phosphoric acid, and 0.02 of lime; that of rye, on the contrary, possesses 0.70 of the former and 0.5 of the latter; but the bran of wheat contains as much as 2.50 of the one and 0.11 of the other; so that flour of the first quality is deprived of the greater part of its phosphate. Hence patients in whom the regeneration is to be promoted, ought to eat brown bread in preference to white. This is a far better plan than endeavoring to introduce phosphates into the economy in their mineral state.—*Galignani.*

Possible Duration of Pregnancy—In the course of an action for damages for the seduction of a young woman, the question of the possibly protracted duration of gestation was raised. The alleged father had had no access to the mother of the child later than 301 days before its birth, and he naturally disputed his liability. Dr. Tanner deposed that the ordinary period was 270 to 280 days, but might be exceeded by two, three, or even four weeks. He thought there was no inconsistency in the present case (from April 15th to February 9th—that is 301 days). He had not known any case himself in which the ordinary period had been exceeded by a week, but he had no doubt there were such cases. He had heard of such. Mr. James F. Clarke deposed that there were cases on record extending over more than 301 days. Sir James Simpson had recorded a case of 310. Dr. Barnes deposed that the ordinary period was 271 days. He had known cases of 280 and of 285 days. He thought it very improbable, but did not like to say it was impossible for gestation to extend over 301 days. It was so improbable that he did not believe it. Dr. Tyler Smith said that the longest period of excess he had known was a fortnight. Dr. Reid, a most accurate observer, had recorded forty-three cases of protraction, the longest of which was 300 days. Dr. Smith considered that case as reliable as any doubtful case could be. The verdict was for the plaintiff; damages, £200.—*Brit. Med. Jour.*

Methylic Ether as a General Anæsthetic.—Dr. Richardson made a communication at the last meeting of the Medical Society—Mr. Gay, the newly elected President, in the chair—on methylic ether as a rapidly acting general anæsthetic. The methylic ether is a gas, but it is absorbed in very large quantities by absolute ethylic ether, and in the fluid the methylic ether is held with fair stability. The ether is inhaled from a simple mouth piece, and anæsthesia, sufficiently deep for a small operation, is induced, in some cases, within the minute. Neither symptoms of asphyxia nor of faintness have yet been observed; and one peculiar part of the phenomena of the anæsthesia is, that the operation, as of tooth-extraction, may be conducted painlessly, while the patient is capable of carrying out what seem to be perfectly conscious acts. During the past week several painless extractions of teeth have been performed under the influence of the ether, recovery from its effects being almost immediate, and unattended by vomiting or other disagreeable symptoms.—*Brit. Med. Jour.*

Physiology of the Blood.—In a recent paper by M. Savotti, in the Centralblatt, he describes a phenomenon of great interest, and hitherto unobserved—the entrance of entire pigment-cells into the channels of the capillaries and smaller veins of the web of the frog's foot through their walls. This is the converse process to that exit of white corpuscles of the blood through the walls of the blood-vessels, which has attracted much attention, and as to which the researches have been brought under the notice of our readers. M. Savotti uses a dilute solution of sulphuric acid—2 per cent. The cells contract and become aggregrated around the minute vessels. Then, putting forth processes, one pierces the wall of the vessel and enters its cavity. The whole cell sometimes is drawn in, and after remaining adherent for a time to the vessel, gradually moves onward with the current of blood. The observation is one of great physiological interest. It will of course require verification.—*Brit. Med. Jour.*

In his Inaugural to the course of Pathological Anatomy in King's College, Professor Lionel S. Beale thus sums up the essentials of reform in medical education: "Good general examinations year after year during the period of studentship, conducted by examiners appointed for limited periods, whose knowledge has been acquired within a quarter of a century of the period when they examine, is really all that seems to be required. If this was established, all registration formalities and compulsory attendance might be swept away, for the student would soon find out for himself how he could most efficiently study the various subjects of which he would be compelled to show that he possessed a competent knowledge."—*N. Y. Med. Gazette.*

Nature of Amyl.—A correspondent of the New York Medical Gazette says: Guthrie, who investigated the properties of the nitrate of amyl after the discovery of it by Balard, proposed it as a resuscitative in drowning, suffocating and protracted fainting. It would seem worthy of a trial in the threatened syncope from chloroform; since the inhalation of but a few drops is followed by marked acceleration of the heart and flushing of the face. The writer poured about eight drops upon a towel, and, as an experiment, snuffed it two or three times, when immediately the radial pulse became accelerated, the heart throbbed with much force, and the pulsation of the cranial vessels became almost painful. At the same time there was a decided tingling in the ears. The symptoms lasted but a few moments, the tingling remaining after the circulation had become quiet.

Easy Mode of Examining the Fauces.—M. Guillaumot states that the throat may easily be examined during the act of yawning, and with much greater ease and convenience to the patient than by the employment of any depressor of the tongue. After two or three trials the yawning can be voluntarily induced; and the practitioner should exhibit to the patient, in his own person, how easily it is brought about. Children readily fall in with the plan.—*Rev. Méd.*

A Simple, Cheap and Efficient Substitute for the Stomach Pump.—Prof. J. T. Hodgen, of St. Louis, Mo., says: About a year ago, I had a case of stricture of the œsophagus so narrow that my patient could not swallow even liquids. To sustain life I resorted to a small stomach tube (a gum catheter, in fact), as a means of injecting liquid nourishment; to this I fixed the elastic tube of one of Davidson's syringes.

On one occasion the vessel containing the liquid happened to be higher than the patient's stomach, and I observed while the syringe was not being used, that the liquid continued to flow into the stomach—the action being that of a syphon. I at once, to test the syphon, substituted a simple elastic tube for the syringe, and found the stomach could be as readily emptied as filled. Thus I conceived the idea of using a syphon instead of a stomach pump, and have used the same in a case of poisoning recently with the most complete success.

I attach four feet of India rubber tubing to a stomach tube, fill both with water by simply dipping it in the liquid end first, then compressing the elastic tube between the thumb and finger to keep the fluid from running out, introduce the stomach tube, lower the outer end of the elastic tube, and the contents of the stomach pour out as readily as if from an open vessel. When the fluid ceases to flow, I dip the outer end of the tube beneath the surface of water, elevate the vessel containing it, and the stomach is soon filled; lower again the outer end of the tube and the stomach is emptied. This can, of course, be repeated as often as is necessary.

The advatages claimed for this simple contrivance are, that it may be almost improvised, is of speedy and easy application, has no valves to become obstructed or deranged, and is less expensive than a stomach pump.

The same principle may be applied in injecting fluids into the bowels, as indeed it has been for injecting into the bladder, uterus and vagina.—*St. Louis Medical and Surg. Jour.*

On Suppositories.—Herman Koch, M.D., writes: "As the application of medical substances in the form of suppositories seem to be growing in public favor, I beg leave to make a few suggestions for the benefit of such practitioners as are not supplied with metallic moulds, and may not possess facilities for obtaining the same. The following plan for obviating the use of the latter which have followed for some time, gives the product of uniform size, shape and weight, and besides being cheaper than metallic moulds, possesses the additional advantage of never spoiling the product by splitting or detaching pieces from the sides.

"This is my plan: Take a piece of soft wood cut in rounded conical shape of a suppository, allowing a portion of the wood in the center to extend beyond the larger end as a handle; roll a small square piece of waxed paper around the cone-shaped end of same, slanting off toward one of the corners. Secure the latter by a drop of mucilage, and the point by a vigorous twist between the fingers. Remove the paper and lay aside until the mucilage is dry, then reinsert the wooden cone, mark edge of same on paper by encircling closely between thumb and fore-finger, and lastly trim off close to said edge with a sharp knife. Keep the moulds thus formed in a cigar box. the lid of which has been perforated with two or three rows of small round holes, which will serve to keep in a vertical position when used. I generally keep on hand three sizes of moulds, holding respectively one, two and three scruples, and mark the wooden cones accordingly. These moulds can not be used more than once, but can be so readily reproduced that this is scarcely a disadvantage.—*Amer. Jour. of Pharmacy.*

Acetic Ether as an Anæsthetic.—The American Journal of the Medical Sciences for July contains the remarks of Dr. H. C. Wood before the College of Physicians of Philadelphia, suggesting the use of ether as an anæsthetic. He exhibited a specimen made by Mr. Charles Bullock, of that city, and stated that he had tried it upon pigeons and rabbits, upon which it produced perfect unconsciousness, without the amount of struggling caused by ether. He had himself breathed it, and found that it produced sensations similar to those produced by ether, but had never pushed it to the production of unconsciousness in a human subject, and hence could not say what its practical value might be. It has a pleasant odor resembling that of apples, and though less volatile than ether, has the advantage over that anæsthetic in being more pleasant and non-inflammable, which latter characteristic renders it safer for night use.

Extraordinury Case.—Dr. W. B. Trull reports in the Boston Medical and Surgical Journal the case of a fisherman who had attacks of retention of urine, which he, by advice of a family physician, obviated by passing a long glass bottle, three inches in diameter, into the rectum and pressing against the bladder. But one day, on an emergency, he passed in a stone 5½ inches long, 3½ inches broad, and 2½ inches thick, which weighed 1 lb. and 14½ oz. This would not come out with or without help. On examination, it was found to have ruptured the rectum near the sigmoid flexure, and passed into the peritoneal cavity, whence it was extracted by an incision through the abdominal walls. In ten days the abdominal wound had healed, no peritonitis had occurred, and the patient was in a fair way to recover speedily.—*Ex.*

The malpractice suit instituted against Dr. Sayre by John F. Welsh, in behalf of his ward Margaret S. Welsh, (whose hip-joint Dr. Sayre was alleged, on the opinion of Dr. Carnochan and Parker, to have injured while opening an abscess), which was decided in favor of the defendant, the referees having reported that the patient was much benefitted instead of injured by the operation, was again brought into court last week on plaintiff's motion to appoint another referee. The motion was denied, with costs.

Weight of Brains.—In the Journal of Mental Science, there is an elaborate paper by Dr. Shuman on the "Weight of the Human Brain," and he gives the following interesting table of the brain-weight of fifteen distinguished men:

		Age.	Oz.
1.	Cuvier, naturalist,	63	64.5
2.	Abercrombie, physician,	64	63
3.	Spurzheim, physician,	56	55.06
4.	Dirichlet, mathematician,	54	53.6
5.	De Morny, statesman and courtier,	50	53.6
6.	Daniel Webster, statesman,	70	53.5
7.	Campbell, Lord Chancellor,	80	53.5
8.	Chambers, celebrated preacher,	67	53
9.	Fuchs, pathologist,	52	52.9
10.	Gauss, mathematician,	78	52.6
11.	Dupuytren, surgeon,	58	50.7
12.	Whewell, philosopher,	71	49
13.	Hermann, philologist,	51	47.9
14.	Tiedemann, physiologist,	80	44.2
15.	Hausmann, mineralogist,	77	43.2
	Average of ten distinguished men,	50-70	54.7
	Average of fifteen distinguished men,	50-80	52.7

The average brain weight, between the ages of 20 and 60, of Scotchmen, is given by Dr. Peacock, at 50 ounces.

Liniment in Fissure of the Anus.—Dissolve one part of tannic acid in sixteen parts of glycerine. A piece of lint dipped in this solution should be introduced night and morning into the rectum. The bowels should be kept open. By means of this preparation M. Van Holsbek, its originator, has succeeded in healing anal fissures which have resisted the division of the sphincter.—*L' Union Médicale.*

Meat Preserved Nineteen Years.—Dr. Stein, (Jour. of Applied Chemistry) while lecturing recently at Dresden on the preservation of meat and food, produced a tin canister of good size, containing butcher's meat preserved by Appert's method, and prepared by himself in 1851. On opening the canister, which had been filled nineteen years previously, the meat was found to be as fresh and full of flavor as when it was first placed in the canister.

MEDICAL NEWS.

"Nulla Dies, Sine Linea."

Carbolic Acid.—Dr. Caniff, Professor ot Surgery, Toronto, Canada, in a paper recently read before the Canadian Institute on the merits ot carbolic acid, submits that if Mr. Lister would still further dilute the antiseptic lotion until the amount of carbolic acid was infinitesimal, but continue to apply the *wash*, he will find even greater success. Dr. Caniff asserts that it is the *washing* that does good.—*Canada Medical Journal.*

Ling Wau, a Celestial charlatan, has taken up his abode in New York, and advertises not only an imported materia medica of 300 "remarkable Chinese medicines," but imported apothecaries to dispense them. In this connection it may be of interest to remark that San Francisco custom-house authorities recently seized an invoice of "remarkable Chinese remedies," consisting of pickled monkeys, dried toads, and such like medicinal articles.—*Medical Gazette.*

St. Louis has taken the iniative in regulating prostitution, a matter which must sooner or later be taken cognizance of in all large cities. The "social evil" will always exist, and we can do little towards limiting it; but we can do something towards limiting the spread ot syphilis, and it is high time that we should direct our energies to the task.—*Ibid.*

Dr. Henry J. Bigelow, of Boston, has recently presented the Massachusetts General Hospital with a complete set of surgical instruments, made under his direction in Paris and London; and also a permanent fund for their renewal, and has subscribed for a free bed for five years, the whole donation amounting to $5,000.

A servant girl, aged 24, with diseased knee-joint, died from the effects of chloroform at Prof. Billroth's clinic. She had been chloroformed on a previus occasion. The pulse ceased to be perceptible before respiration stopped.

Kirschenwasser.—This substance is obtained by the distillation of bruised cherries, and besides frequently containing prussic acid derived from the cherry stones, is a highly intoxicating liquor.

Mr. Thomas Nunnely, F. R. C. S., one of England's most famous surgeons outside the metropolis, died in Leeds in the early part of June.

Surgeons for the Prussian Army.—American surgeons with a knowledge of German are invited to join the Prussian Army.

A true bill has been found against the parents of the Welsh fasting girl, who was recently allowed to starve to death. It is a vast pity that law cannot be brought to bear upon those who connive at similar hysterical impostures in America.

Professor Lister, famed in connection with "antiseptic surgery," has been appointed Surgeon in Ordinary to the Queen in Scotland.

Sir William Fergusson has been elected President of the Royal College of Surgeons, London.

The University of Nashville, Medical Department, has reduced its *Fees* to $50.

EDITORIAL.

"Nullius Addictus Jurare in Verba Magistri."—Hor.

☞In consequence of the sickness of the Senior Editor, the Editorial Department is necessarily omitted.

BOOKS AND JOURNLAS RECEIVED.

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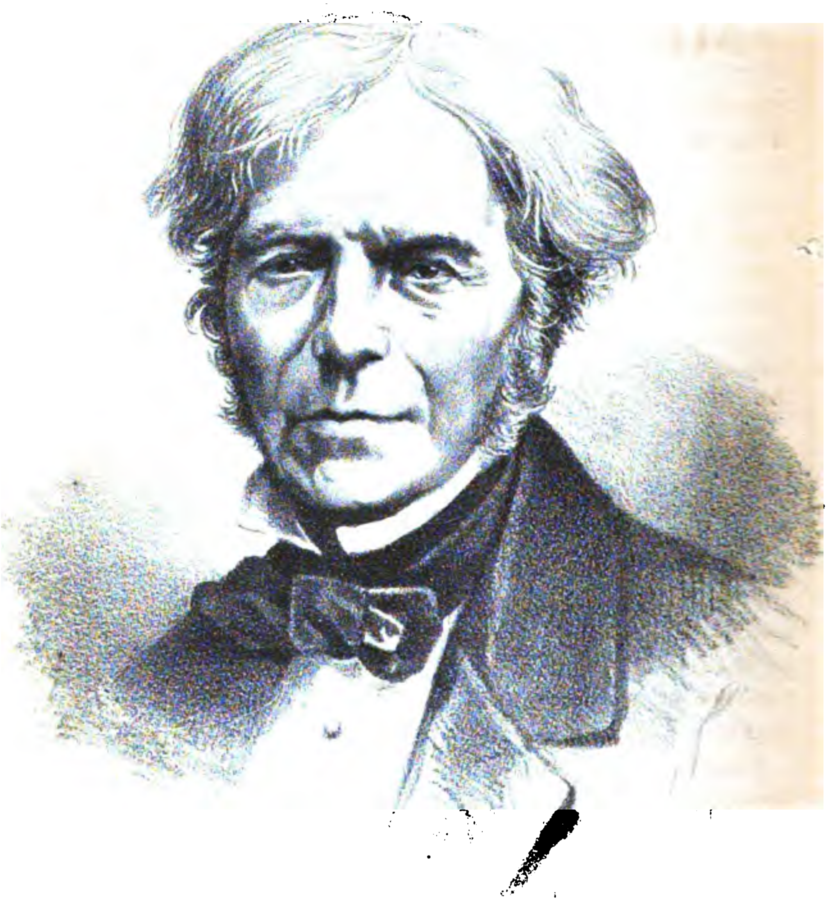

FARADAY.

THE RICHMOND AND LOUISVILLE

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ORIGINAL COMMUNICATIONS.

"Qui Docet Discit."

ART. I.—REMARKS ON ANGINA PECTORIS. Read before the Medico-Chirurgical Society of Louisville. By J. A. OCTERLONY, M. D., Professor of Materia Medica, Therapeutics and Clinical Medicine in the Louisville Medical College.

Morbid phenomena are frequently observed, which, though merely symptoms yet, on account of their prominence and importance, are generally spoken of and described by authors as distinct diseases. Such are hæmoptysis, hæmatemesis, jaundice and diarrhœa; and to them belongs also angina pectoris.

It is probable that the agonizing seizures, designated by this name, have had their victims in all ages, but the nosological existence of angina pectoris is of recent date. To the British School belongs the honor of having enriched our knowledge of thoracic diseases by this addition. Dr. Heberden, of London, was the first to give an account of angina pectoris, in 1768.* He gave a full, correct and vivid description of it, recognized the connection between it and a diseased condition of the heart, and applied the name by which it has ever since been known. The best writings on angina pectoris have come to us from Great Britian. Most prominent among them are those of Heberden, Parry, Jenner, Forbes, Hope, Latham, Stokes and Walshe; and in our own country, Austin Flint. Canstadt* gives the fullest account of the bibliography of angina, and I suppose includes everything of note published up to this time.

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*Flint Dis. Heart, first ed. p. 254.

Trousseau's article is brilliant rather in a literary than a scientific point of view. It pleases and entertains, but is superficial withal.

It is a rare affection. Flint† found only seven of angina among over one hundred and fifty cases of organic diseases of the heart which he analyzed. Yet, during a much shorter and far less extensive experience, I have met with at least three typical cases. Angina pectoris is a neurotic disorder, occurring in paroxysms, of variable duration and recurring at uncertain intervals. There is intense pain, a sense of impending dissolution and a tendency to syncope. This definition is as complete and accurate as the present state of our knowledge will admit; so far as it goes it is correct, but the objection made to the name angina pectoris, may perhaps be urged against our definition; it is inadequate to express the real nature of the lesion. Dr. Latham speaks very wisely and beautifully on this point; indeed, his words are so appropriate, and his language so perfect a model of medical writing that I do not scruple to quote from him at some length: "Our knowledge of angina pectoris stops short with its symptoms. The idea can not be made to rest in any definite form of disease beyond them. We are sure what it is as an assemblage of symptoms. We are not sure what it is as a disease.

There is a use, sometimes, in thus measuring the limits of our knowledge. In a profession like ours it is not enough to lament its imperfections. We should rather seek to understand wherein they consist, and to learn to bear with them and to make the best of them. Medicine is a strange mixture of speculation and action. We have to cultivate a science and to exercise an art. The calls of science are upon our leisure and our choice; the calls of practice are of daily emergence and necessity. Science may minister to practice much or little. But whether science help us or fail us, whether its instrumentality be sufficient or defective, still we must act. We are bound to the constant endeavor of doing the best we can, whether upon a perfect or an imperfect knowledge.

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*Flint, op. cit. 260.

†Pathology and Therapie.

The imperfection of our knowledge, now especially pointed out, is, where all our pretensions to be exact, must rest in the character of the symptoms and can not reach to the nature of the disease. But let us be just, at least, to such pretensions, and not run away with the notion that this knowledge is no knowledge at all. For the fact is far otherwise. Often, indeed, where there is much more knowledge beside this, yet is it this and this only that can be made use of; and all the rest goes for nothing when we come to seek for guides and indications for treatment?

Think what symptoms are. They are not mere signs of the disease, but they are direct emanations from it; not things in themselves nugatory but eminently real. They are natural sensations unduly exalted, or unduly depressed, or variously changed or perverted. They are natural functions hurt, hindered or abolished, so that a man may often, with stricter propriety, be said to be ill of his symptoms than to be ill of his disease, and, what is more, to die of his symptoms than to die of his disease. Accordingly, it often happens, even where the disease is best understood, that we treat the symptoms, and the symptoms only, just as if we had no knowledge of anything beyond them. Therefore, when we have confessedly no strict knowledge of anything beyond them, and the aim of our practice must needs center in the symptoms, we are not to lament over the short comings of our art and its straitened capacity of doing good. For it does not follow that, if we knew the disease ever so well, we could treat it otherwise than we are now treating its symptoms, or that what we are now doing for the symptoms, would not be the best, and would not be all, that could be done for the disease itself.

The symptoms of angina are strikingly peculiar and characteristic. It is not merely pain, nor a pain of a special kind, it is not the sense of imminent peril alone, nor dyspnœa, nor palpitation by itself, but it is a combination, in variable proportions, of all these, though sometimes to the exclusion of one or two. The sword of Damocles, in the shape of constant danger of recurring paroxysms, is perhaps the most terrible feature, when a person has once had an attack of angina pectoris.

The attack usually comes on suddenly and without warning. The patient, apparently well, is standing still, engaged in conversation, he sits quietly reading or writing, perhaps he is walking at his leisure, or enjoying a peaceful slumber in his bed. Without the slightest premonition, he is smitten, as by a thunderbolt; he stands immovable. The thrill that pierces through his whole frame has never been described; no one can describe it. Patients tell us they experience a sensation as if soul and body were being rent asunder. But this is very vague, for no one in this world has ever known, before absolute death, what state accompanies this separation; I believe, however, these persons thus describe their sensations because they think death *must* be painful. This much is certain, uncontrollable terror takes possession of them; they dare neither move or speak lest instant death should follow; to steady themselves and to prevent even the least movement, they often grasp the nearest firm support and hold on to it as with the grip of death.

The patient suffers, besides, intense pain, which is referred to the præcordia, or is located under or to the left of the sternum. Valleix* cites two cases in which the pain was felt on the right side of the sternum. The pain often radiates in various directions; it is not unfrequently transmitted to the left shoulder or the whole left arm, or it shoots into both sides of the chest and the back. Sometimes the pain extends into both upper extremities, and cases have been observed in which the lower extremities were involved. Dr. Hope met several cases in which the pain pervaded all the extremities. The pain may stop abruptly at the shoulder or elbow, or, as observed by Dr. Flint, it may be felt exclusively in the forearm. Sometimes the pain shoots up the neck, and in other cases it is transmitted along the nerve of Wrisberg.* In fact, in whatever direction the pain may radiate, it seems to follow the course of some nerve. The præcordial pain is rarely dull or aching; most commonly it is gnawing, tearing, lancinating, grasping or suffocative; whatever be its character, it is an indiscribable torture. The radiating pain possesses the shooting, stinging, tingling and benumbing qualities of neuralgia. There may be a sense of numbness as if the limb were paralyzed, and in some cases there is tenderness to the touch and hyperæsthesia of the integument over the situation where the pain is felt. This is especially observed in females. Walshe mentions numbness referred to the testes as a rare concomitant, which he has observed. All these pains are considered as secondary—reflex or sympathetic offsets from the cardiac nerves primarily involved.†

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*Guide de Medicine Pratique.

The state of the respiration during the paroxysm constitutes one of the most important points in the symptomatology of this mysterious affection. It is certain, that the sense of suffocation and impending death are not due to dyspnœa; on the contrary, while dyspnœa may co-exist and complicate the paroxysm, it does not form a constant or even a very frequent element of the latter. Dr. Parry, whose essay was published in 1799, and is acknowledged to be the best ,paper on the subject, strongly insists on the absence of dyspnœa. In the cases he met with, the patients were seen to make long deep inspirations, and retained their breath without reluctance. Heberden made the same observation. Parry reports a case where the patient was in the habit of resting on a full inspiration as it would afford momentary relief to the pain and uneasy sensation in the chest.

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*Parry quoted by Stokes. Dis. Heart and Aorta, p. 499.

†Walshe. Dis. Heart, p. 157.

Flint says:* Dyspnœa is not a constant element of the paroxysm, it may be present, but is frequently wanting. The respiratory movements are often momentarily suspended or restrained by an act of the will, from fear of increasing the pain and distress, but the ability to expand the chest and breathe regularly is not necessarily impaired.

Walshe says: "Dyspnœa, subjective or objective, is not an essential phenomenon of the anginal fit. The number of respirations may *secondarily* be augmented, though never to any notable degree; but a real sense of dyspnœa, a marked increase in the craving for breath—does not occur in the pure disease. Special hyperæsthesia of the medulla oblongata or pulmonary branches of the vagus nerve is not, in other words, excited. It may, on the contrary, almost, be affirmed that the special sensibility of the pulmonary nerves is temporarily maintained below par. For the *amount* of expansion with each inspiration is lessened, by combined consensualism and volition, from the dread of increasing the post sternal pain, while the number of breathing acts in the minute scarcely undergoes any, and certainly not a commensurate increase. By an effort of the will, if the patient have the courage to risk the chance of a moment's extra agony, the chest may be freely expanded.* One of my cases suffered from dyspnœa, the other two were free from it during the paroxysms. But as angina is a concomitant of organic disease of the heart, which frequently occasions dyspnœa, we must expect to see these conditions associated together." They are frequently confounded; Stokes says: "Many cases denominated angina pectoris by one physician would be called cardiac asthma by another."† Flint mentions the case of a very intelligent patient of his who was subject both to angina and dyspnœa; he described them as clearly distinct from each other, nor were they liable to occur at the same time. They may, however, occur simultaneously in some instances.*

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*Op. cit. 255.

†Stokes op. cit., p. 499.

The peculiar respiratory phenomenon of angina is some form of sighing respiration so important a symptom of a fatty or weakened heart.

The circulatory symptoms next claim our attention. It could hardly be expected that the heart's action should be undisturbed during the paroxysm, especially if it be severe. Sometimes the heart beats tumultuously, seeming to the patient "as if it would leap out of his mouth,"† or, it may be irregular or intermittent. The pulse may be unnaturally slow, more frequently it is accelerated, it may indicate vigor, in other instances, feebleness of ventricular contractions. John Hunter, who had angina pectoris, could not feel his pulse when laboring under a paroxysm, so imperceptible was it.‡

During the intervals there is nothing peculiar in the pulse —in fact it is perfectly normal, unless there be some *obvious* organic lesion of the heart. If these attacks are determined by some abnormal condition of the coronary circulation to the exclusion of other structural diseases of the heart, there is of course nothing to induce alteration of the pulse between the paroxysms. The countenance changes suddenly and becomes pallid, the features are anxious, haggard and death-like, the forehead is sometimes moist with a cold, clammy perspiration. In some instances the complexion becomes livid, but it may safely be assumed that in cases of angina, where marked lividity of the face and genuine dyspnœa exist, the orifices or walls of the heart are seriously affected. The extremities are cold and there is a fall in the temperature of the surface generally.

The gastric branches of the vagus are sometimes implicated, but there may be eructation (not explicable by the last meal) and rarely vomiting, proving irritation of these filaments. Flatulent distension of the whole abdomen has been observed. During the paroxysm the urine is sometimes suppressed,* but toward its close there is usually a copious discharge of watery urine.† The mind is unaffected, and this clearness of the perceptive faculties adds to the fearful sufferings of the patient.

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*Flint op. cit.

†Flint op. cit., p. 256.

‡Aitken's Practice, vol. 2, p. 658.

Slight convulsions are said to occur occasionally; the gravest tetanic spasms, with opisthotonos, have been observed. When the seizure has been of this kind, tonic spasm may hold on, in some spots, hours after the actual fit has passed away.‡

I have thus presented what I believe to be a faithful and comprehensive review of the symptoms which properly belong to the anginal state. But I shudder at the task of depicting the agonizing tortures endured by its victims. Not only does the patient suffer excruciatingly during the paroxysm; but the constant danger and ceaseless dread of their return, render life an almost unsupportable burden.

Fortunately the attacks are not always severe, but the tendency is to increase in frequency, severity and duration—so that the longer the disease lasts the worse it generally becomes. The duration of the paroxysms is variable; sometimes it lasts for a few moments or minutes, sometimes the seizure continues to return with short intervals for an hour or more, the paroxysm being made up of a number of seizures. Usually it goes off as suddenly as it came, but in exceptional cases the attack subsides gradually. A past attack of angina leaves no impress upon the structure or action of the heart and the patient speedily rallies. He feels exhausted but the sense of relief from intense suffering is very strong and grateful.

When an attack of angina has once occurred it is very certain that others will follow, and the probability is, that the paroxysms will become, progressively more frequent and violent; with each attack the patient becomes more susceptible to another, so that an influence which at first would have failed to excite, eventually produces a paroxysm. In the case of John Hunter, a fit of anger was invariably followed by a paroxysm of angina. He was so well aware of this that he used to say: "My life is in the hands of any rascal who chooses to annoy me;" and a violent fit of anger brought on the attack that finally terminated his life. Sometimes several attacks occur at short intervals for several days, and then the patient enjoys a respite for many weeks or months. Flint reports the case of a patient who, at the age of 67, had two exceedingly severe paroxysms, each lasting from three to four hours, with an interval of two days. He had no subsequent attack and died ten or twelve years later, with symptoms of cardiac disease.

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*Walshe, op. cit. p. 158. †Aitken's Pract. p. 658.

‡Allingham, U. C. H., Females, vol. xvii, p. 57.

Course and Duration of the Disease.—There are no data from which to calculate the mean duration of angina pectoris. But we are safe in affirming that in most instances it runs a rather protracted course. Remarkable exceptions to this rule are not wanting. It sometimes happens that the disease terminates fatally a very short time after it has first declared itself. Latham relates the history of two cases; in one, death ensued at the end of a fortnight, in the other, after ten days. Even the first paroxysm may prove fatal. The distinguished and noble Dr. Arnold, of Rugby, thus fell a victim to the very first manifestation of this strange disease, while John Hunter suffered for many years before he died at last in one of these seizures.

Death from angina pectoris is usually sudden—sometimes instantaneous; a single pang terminates existence; there is no struggle, no convulsion. Walshe saw a case, with Golding Bird, where death had occurred thus instantaneously, while the patient was reading quietly in bed; there was so little disturbance of the frame that his thumb and forefinger were found in the pamphlet on which he had been engaged; the bedclothes, too, were undisturbed. When the liberation of the soul from the fetters of mortality is so quickly accomplished, the body is always found in an attitude of calm repose and the features wear a placid expression. I saw a perfect illustration of this in one of my own cases; an old gentleman of 84, died suddenly of angina pectoris in the night. When seen in the morning, he lay as if quietly asleep—a fine sweet smile still lingered upon his lips and lighted up the noble countenance with such a vivid expression, it was almost impossible to realize that life was extinct.

In cases like the above death occurs from syncope. But patients may die more slowly of angina. There is extreme asthenia, imperceptible pulse, labored breathing, cold clammy perspiration, convulsions, insensibility, and final dissolution. In some instances angina is associated with such grave organic lesions of the heart, that speedy death is inevitable; but then the patient dies of these and not of angina; and the mode of death varies as one or the other set of secondary lesions preponderate in the case.

Angina pectoris is a disease of middle and old age. Of eighty-eight cases collected by Sir John Forbes, seventy-two were past fifty years. The age of my own cases were respectively fifty-two, sixty-five and eighty-four. Flint, however, observed the disease in a young woman of twenty, who afterward died in an attack. Heberden also believed youth conferred no exception, and Robert Hamilton said it might attack children, but the last statement has never been substantiated. Males are much more liable to the disease than females. Of Sir John Forbes' eighty-eight cases, eighty were males, and only eight females. It is supposed to be more common among persons in the higher walks of life. Almost all of Trousseau's cases were of this class. Walshe says it is much more common in the latter than in the humble walks of society, and his own experience, confirming that of Sir Gilbert Blane, supplies him with scarcely more than a solitary well defined example of true angina in hospital practice. The causes are either predisposing or exciting; among the former, we must place, age, sex and social condition, as explained above. Trousseau and others believe that angina is indeed, in some instances, a rheumatic or gouty affection.* The connection between this disease and structural lesions of the heart and great vessels will be hereafter considered.

The immediate or exciting causes are numerous and varied. The first seizure generally comes on after some exertion, though Latham records a case where it first took place in bed; ascending a hill, mounting a staircase, or even walking briskly on level ground will bring on a paroxysm. Sometimes the patient may make his way up a steep hillside without incurring a seizure by walking zig-zag, instead of stepping strait ahead. Mental emotion is a very frequent exciting cause. In a case recorded by Flint the paroxysm often occurred during sleep, and appeared to the patient to be produced in consequence of dreams. On account of this liability he hardly dared to sleep. The act of swallowing solid food was sufficient to bring on a paroxysm, so that the patient resisted as long as possible the desire to take nourishment. Often the attacks come on without any appreciable cause, and when the patient is in perfect repose. But when they occur frequently, even the most trifling causes may induce a paroxysm.

In the present state of knowledge, angina pectoris must be looked upon as a special set of symptoms rather than a disease having a fixed anatomical character. In a clinical point of view it is an important and strongly individualized disorder; with striking characteristics and a clinical history peculiarly its own. From a pathological stand-point, it assumes another aspect, and at present angina seems to have no independent pathological existence. All recent authorities acknowledge that it is always associated with some organic lesion of the heart or great vessels. Trousseau is the only one to recognize angina pectoris without some co-existing anatomical lesion; but he evidently includes under this name, not only angina, but simple cardiac neuralgia and epilepti form neuralgia; and a number of his reported cases have scarcely justified the diagnosis of angina. Indeed, his cases very forcibly illustrate a remark quoted by himself, viz: Twenty-five years after Heberden, an individual need only complain of anxiety and of a sense of constriction about the chest, even of impeded breathing, and it was immediately ascribed to angina pectoris.

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*Clin. Med. vol. 1, p. 600.

So much has been written on the supposed pathology of angina pectoris—so many contradictory opinions have been advanced—urging on the one hand that it may occur where no form of disease or disorganization of the heart and great vessels exist; and on the other, that one or several such lesions always are associated with it; that a full account of this interesting part of the subject must necessarily be beyond the scope of this paper. It is quite certain that, whatever differences of opinion prevail in regard to the mechanism of angina, all recent authorities agree that no reliable observation has yet been recorded where some organic lesion did not exist. We now know that a heart may be profoundly diseased when it looks perfectly healthy. No post-mortem examination can now be conclusive, either one way or the other, until the microscope shall have decided upon the healthy or morbid state of the minute structure of the heart. The testimony of Dr. Walshe is strong and unequivocal, viz: Recent narratives, as far as I know, invariably describe some organic change; and older accounts are not trustworthy, seeing that accurate knowledge concerning dilatation and other forms of mal-nutrition has been the acquisition of the last few years only. My own experience, as far as it goes, emphatically deposes to the constancy of structural disease. It has occurred to me to examine during life some twelve or fourteen cases of thoroughly well characterized angina; in every one there were physical signs of organic change—flabby or fatty dilatation and aortic disease principally. I have opened, or seen opened, the bodies of four persons destroyed in the actual paroxysm; the heart or aorta, or both, were texturally affected in all.*

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*Op. Cit. 261.

The venerable and illustrious Stokes speaks to the same effect: It is greatly to be doubted that angina pectoris has ever occurred in a patient perfectly free from organic disease of the heart or aorta; and it is more probable that in the cases so described the disease was overlooked, than that the heart was perfectly sound. Such cases as were observed before the application of the microscope to pathological anatomy may be set aside as proving the existence of angina without organic change. Some twenty-five years ago Sir John Forbes collected forty-five cases in which the post-mortem appearances had been recorded; in only two of these was the heart reported sound. Flint, in commenting on this, makes the remark that, as certain morbid states of the heart have not been fully recognized until within late years, it is highly probable the disease in these exceptional cases may have been overlooked.* This point, then, it must be conceded, is pretty well settled. Almost every conceivable structural disease of the heart, its walls, orifices, valves and nutrient vessels, have been recorded among the post-mortem appearances in the victims of angina. The organic changes most frequently met with are fatty, degenerative dilatation, obstructive disease of the coronary arteries, and calcification of the orifice and arch of the aorta. In fact, disease of the orifice and arch of the aorta is present in the larger proportion of cases. Among thirty-nine cases analyzed by Sir John Forbes, aortic lesions were present in twenty-four. The rarest changes have been hypertrophy and hypertrophic dilatation.

Having ascertained so far that in angina pectoris there is a nervous element and some structural lesion of the heart, which is subject to great variation, we are led to inquire how are these two combined to produce a seizure—in other words, what is the natural mechanism of the paroxysm? Heberden and Latham attribute it to spasm of the heart; but this theory is untenable, and for the following reasons: 1st. †It is uncommon at the age when muscular activity is greatest; most common where the muscles become flabby and weak. 2d. It is most common in persons with hearts weakened by valvular lesions and degeneration or dilatation of the walls. 3d. It is very rare where hypertrophy of the heart exists. 4th. It is difficult to understand, while bearing in mind that the heart is a hollow muscle, how such a local or general spasm could occur as would only impede—not destroy its function; for a complete spasmodic closure of any one cavity ought to cause death by breaking the continuity of the circulation. 5th. After death from angina the heart is not firmly contracted upon itself, but the organ is found relaxed and flabby—almost always degenerated—with fluid blood in its cavities; in fact, just in the condition to be expected when death has occurred from syncope.* 6th. Stokes has noticed the spasmodic contraction of the heart in tetanus, but in such cases the symptoms of angina were not observed.

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*Op. Cit. p. 498.

†Stokes' Op. Cit. p. 501.

Neither can the hypothesis stand which attributes the occurrence of the paroxysms to the textural lesions, or to simple weakness. For there is no imaginable disease of those structures or parts which has not in various individuals reached the highest point of development without anginal paroxysms, even of a slight kind, having occurred during life. From this proposition Dr. Walshe excepts calcification of the coronary arteries.

Again, the heart is weakened in numerous cases of degeneration and dilatation without the occurrence of angina; in fact, angina pectoris occurs but rarely compared with the frequency of the former states.

In many instances of angina there are no symptoms of a weakened heart; on the contrary, this organ may even act with the abnormal force of hypertrophy.

It is known that many cases of angina have been observed where no apparent disease of the coronary arteries existed, but it is tolerably well established that angina has been an invariable concomitant where these vessels were the seat of obstructive changes. It would not, therefore, be very unreasonable to suppose that some temporary stagnation of the coronary circulation, such as might easily enough be induced by mental emotion or unusual exertion in a person whose heart is already diseased, is really the cause of the paroxysm. Of course such clogging of the coronary arteries or veins would leave no post-mortem changes, and this might account for the cases where the coronaries are to all appearances sound. Plethora, or overfilling of a diseaed heart, would naturally have this effect of inducing stagnation in the coronaries; and, that such plethora really occurs, has been proved by Sir John Forbes to be very likely, if not certain.

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*Walshe's Op. Cit. p. 161.

Whether the above be correct or not, there is even in the most serious cases of textural change a neurotic disturbance beyond that change, which disturbance is the essential element of the paroxysm. That textural change acts simply as a promoter of the seizure, by rendering the nerves in some way more apt to suffer disturbance, probably by mal-nutrition; and I believe that the nerves, which, being badly nourished, become the seat of disturbed action, are the microscopic ganglia which Remak first discovered on the surface of the heart, and which are similar to those he found in the bronchial tubes and stomach.

The prognosis in angina is always grave, its duration uncertain, and perhaps this uncertainty increases in no small measure the formidable character of the disease.

The diagnosis of angina pectoris is usually made with ease; but the following diseases may be confounded with it: dyspnœa, or cardiac asthma, and pseudo angina, or cardiac neuralgia.

Now labored breathing does not belong to angina; on the contrary, the patient can always draw a long breath in the latter, and may derive relief from it. In dyspnœa we have no peculiar pain, no anxiety—the surface differs in the two: in dyspnœa we are not apt to have the pallid and clammy skin characteristic of angina. Dyspnœa lasts longer, is not sudden in its access and departure and leaves no numbness.

In certain forms of neuralgia, characterized by considerable pain in the præcordia, palpitation and anxiety, the diagnosis may be more difficult. But these affections occur at an earlier age, chiefly among females, and in hysterical and anæmic subjects. The pain, though severe, does not amount to torture; there is no sense of impending death, access and cessation are less abrupt—neuralgia lasts longer, and the patient tosses about—does not remain fixed to the spot as in angina; and in the latter disease the patient is often attacked when seemingly in robust health, which is not the case with subjects of the former who are almost always dyspeptic. The presence of organic lesions, so commonly to be discovered in angina, should also be taken into account.

The treatment should aim first at the arrest of the seizure; secondly, to prevent its return.

Opium, chloroform—perhaps chloral—and the ethereal preparations, with carbonate of ammonia, fulfill the first indication. Trousseau reports at some length the experiments and results of Dr. Ducheaux, who employed faradization. The application of the electric current arrested the fit immediately, and the Doctor seems to have taken pleasure in making the patient repeatedly bring on an attack merely to have the satisfaction of cutting it short each time, but electricity seemed also in this case to make the patient less susceptible to a recurrence of the fit, so that at last the poor man had to work right hard before he could induce its return. This plan was long ago suggested by Læennec, and Walshe remarks, that it has not yet been fairly tested.

To prevent a return the patient should lead a well regulated life; he should carefully guard against circumstances which are known from past experience, as likely to induce an attack. His pursuits should be quiet and unexciting. The heart should be kept tranquil and the mind at rest. He must govern his temper and suppress and avoid corporeal, mental or emotional excitement.

In preparing the foregoing resumé I have freely drawn upon the excellent monographs quoted in the foot notes, though omissions may have been made, especially where the writer has quoted from memory.

ART. II.—SKIN GRAFTING. By J. J. CHISOLM, M. D., Professor of Operative Surgery, in the University of Maryland.

A novelty in conservative surgery which promises valuable results, is the process introduced very recently by M. Reverdin, of the Paris Hospitals, and repeated by Mr. Geo. Pollock, of St. George's Hospital, London, of transplanting epidermis into the raw surface of old ulcers, for the purpose of promoting their healing. In the practice of every surgeon can be found chronic ulcers, more especially those resulting from extensive burns, which heal to a certain extent, but can not be urged to a final closing. After the clearing away of the sloughs, granulations spring up and cicatrization commences actively enough, a pellicle of raw skin jutting out from the entire margin of the raw surface. If the area to be covered be extensive, the new dermic formation encroaches less and less rapidly as week after week passes by, and at last this retarding formation comes to a stand, leaving a more or less extensive central raw surface uncovered by epithelium. These form one of the varieties of the indolent chronic permanent sore, which will not heal notwithstanding the most assiduous care of surgeon and patient.

A living substance possessing formative power, can only produce its kind, and under this general law of nature, old skin alone can form new; therefore is it that islets of new skin are never seen dotting the surface of an ulcer which has extended through the entire depth of integumentary tissues. When a heavy demand is made upon such a formative tissue as the skin, the living nucleated cells of which its rete mucosum is composed, at first, multiply with rapidity, but observation shows that each successive progeny as they enter this world independent cells exhibit a slightly impaired formative functional power. If the necessity for continued reproduction exists, the procreative properties which the first set possessed to so high a degree, diminish as each new issue becomes more widely separated from the primitive maternal stock. The cells finally run themselves out, and cells are found which barely possess vitality enough to keep themselves alive under the most favorable circumstances, and which slough away whenever exposed to depressing influences. In these, the formative power is exhausted, and reproduction ceases. It is of such feebly vitalized cells that the edges of old chronic ulcers are formed; and the reason why these old sores resist repeated efforts on the part of the surgeon to heal them, is the absence of this procreative power on the part of the epithelial cells.

The plan introduced by M. Reverdin, comes to the rescue of patients otherwise doomed to carry about with them these ever running sores. By planting a few cells of healthy epithelium at various points of the raw surface, centers for the development of new skin are formed, and by the multiplication and extension of these patches, a sufficient amount of healthy skin can be grown to cover the entire raw surface. This sound cicatrix, composed of cells fully vitalized, will not contract excessively, and thereby the ugly deformities, so constantly resulting from extensive burns, can be to a great extent prevented.

In carrying out the plan proposed by M. Reverdin, a small piece of epithelium is taken from some healthy cutaneous surface, as from the trunk, arm or thigh. The little graft which is seized by a fine forceps, and snipped out with a sharp scissors, should be about the size of a ½ grain of rice. It should include some of the superficial dermis or rete mucosum, so as to secure with it some of the deep living cells; and not consist only of scarf skin which being formed of horny, flattened scales without nuclei (the formed material of Beale), would be incapable of growth.

The deeper, soft, granular, more recently formed part, which constitutes what is called the Malpighian layer or rete mucosum, is the portion required. Under the microscope numerous nucleated cells are found in this inner epithelial layer, which possess the inherent power of multiplying in kind when placed in favorable conditions for propagation. The operation of grafting is continued by making a small puncture in the raw surface and thrusting into it this little fragment of skin, which is then retained in place under the protection of a slip of adhesive plaster. These living cells, in the presence of the nutrient pabulum, the blood, imbibe such nourishing material as is required for their continued vitality, and at once commence a process of proliferation, which soon makes itself seen. Like the small vegetable twig, which, when grafted into a suitable stock, grows and in time becomes a tree; so does this little aggregation of living germs, imbued with active life, soon form a visible surface, which spreads on all sides. If the edges of the ulcer be not too distant, or the planted germs be sufficiently numerous, they will in time coalesce with the inactive periphery, and the cicatrization of the old, raw surface is accomplished. The rapidity with which the surface will become covered, will depend somewhat upon the age of the patient and the number of points ingrafted. From the experience of four cases, healthy skin being taken in all, the rapidity of growth seems to depend upon the vital activity of the stock upon which the grafts are planted, the younger the patient the more rapid the growth.

I would suppose that a small piece of epithelium would sustain itself more readily than a large piece; in this respect, corresponding with the experience of horticulturists, who select by preference small twigs for successful planting. This might be explained by the fact, that in a small piece of epithelium the living cells are brought in more immediate contact with the nutrient juices, while the central cells of a large piece would be too distant from the surface to be nourished, and would die. Again—if the graft be thrust too deeply in the body of the granulating surface, it fails to take root, and yet if placed upon the very surface it would be washed away with the secretions from the ulcer. Even when planted with care, all grafts do not grow. In one of the cases in my experience, only one out of three insertions was successful; in other cases, all the grafts formed centers for skin formation.

My attention having been attracted by an article in the *Lancet*, of July 9, which came to hand toward the end of the same month, I determined at once to verify the experiments of Mr. Pollock, and on the 25th July grafted my first germs. The following cases embody my experience:

Case I. Michael Graham, aged 26, a stout, vigorous Irishman, employed in a foundry, by accident received in his boot a portion of the contents of a ladle filled with molten iron, March 10, 1869. When the sloughing surface cleaned off, the left leg was found bare of skin from near the knee to the ankle. For the first few weeks of treatment, cicatrization was active, and the upper and lower margin of the ulcer formed new skin freely. The process was then retarded, and finally progress became exceedingly slow. Sixteen months after the accident, a space of five inches long and from one and a half to three inches wide, remained a typical, indolent ulcer. It was in the center of this raw surface, at its narrowest portion, that a piece of epithelium, taken from the chest, the size and thickness of a half grain of rice, was carefully inserted, July 25, 1870. Fortunately, it germinated, and in the course of three weeks made its appearance as a white point amidst the large raw surface. The soil being good, its growth was rapid, and at present, fifty-five days from the day of insertion, it has completely spanned the gap, its growing edges having coalesced with the continuous borders of the ulcer opposite the place of planting. The raw surface is now divided by this bridge of new skin and two smaller ulcers. The center of the new band, for nearly one inch square, consists of fully formed skin covered by dry white epithelium. This is surrounded by a zone of bluish, newly-formed skin which has become fixed with the thin cuticular margin of the ulcer. Several skin grafts have been just inserted into the remaining raw surfaces, and in the course of a few weeks there is every reason to believe that the entire area will be covered by healthy skin. By this process, what was supposed to be an incurable sore leg, will be made speedily whole, with the prospects of regaining a useful limb.

Case II.—P. S., aged 30, was burned three months since by a kerosene lamp explosion. The skin was destroyed on several portions of his body and limbs, the most extensive burn being on his right leg, involving the ankle. Two months after the injury had been received, an ulcer still remained, three inches long by one and a half inches wide. Two germs were inserted in the central line of this raw surface, and the entire ulcer carefully strapped with adhesive strips. At the expiration of three weeks one of the grafts had attained the size of a grain of corn. The edges of the ulcer had much contracted, so that the surface of the ulcer had diminished to one-half its former dimensions. At one point the grafted skin had coalesced with the edge of the ulcer and formed a promontory jutting conspicuously into the center of the raw surface.

Case III.—J. G., aged 50, of frail constitution, has had a sore leg for fifteen years. The ulcer has often healed up, but would soon open again, and has for the past two years been permanent. At present a raw surface, four inches long by two to three inches broad, is surrounded by hard indurated edges, which is set in a broad surface of old cicatricial tissue. Three germs, taken from the chest, were grafted in the central line of this ulcer and secured in place by straps of diachylon plaster, August 12, 1870. When the surface was examined, four weeks after the transplanting, each germ was found to have taken root, and now form three well defined islets of skin, each the size of a small grain of Indian corn, one-third of an inch in diameter. From the edges of each of these a thin pellicle of skin was encroaching upon the surface of the ulcer, and they are now three active centers aiding in the cicatrization of the exposed surface.

ART. III.—CASE OF EXTRA-UTERINE PREGNANCY. Occurring in the practice and reported by W. TALBOT OWEN, M. D., Louisville, Ky.

Eliza Bibb, a dark mulatto, servant woman, living on Third street, aged thirty-five years, sent for me in the evening of 9th June last. The following presentation of her case was made: Nausea, with vomiting, and pain of a bearing down character in the left iliac, and left inguinal region; had no knowledge of the cause; had felt well all of the day, and as well as usual for some months previous; had attended to all of her ordinary duties without any sensation of pain; her menses had ceased four months previous; had been pregnant five years ago, and was delivered at full term of a child; recovered in due time her health and a restoration of the menstrual flow, and continued to menstruate regularly till a period dating four months back, when she considered herself pregnant. I pronounced her pregnant, upon the mere statement as given above.

Prescribed oxalate of Cerium gr. i, sol. morphia gr. ⅛, every two hours till relieved. Visited her the next morning and found her completely relieved; up, dressed and ready for work. She had taken three powders.

On the 29th of June I was called to see her again, when she presented the same symptoms as those of the first visit, with this difference: the vomiting was more severe, the pain was located lower down in the left iliac region, and was more violent than at the first attack. She informed me that in the interim of the two seizures, namely from 10th to 29th of June, a space of nineteen days, she had been well as ever in her life, had attended to all the customary duties, cooking and washing, etc., and attributed this attack to a sudden fright she had received from a dog on the street the day previous. Pulse normal, skin soft and pleasant to the touch, slight thirst, bowels regular, urine scanty and highly colored. Ordered oxalate of Cerium and morphia as before.

June 30. Found patient partially relieved of nausea and pain; slight increase of febrile symptoms, urine more scant, all of which were attributed to the morphia. Doubled the dose of morphia, and infusio Bac. Juniperi. ℥ viii, to be taken in 24 hours.

July 1. Slept pretty well through the night; pulse 100, skin warm, no improvement in urine; "bearing down" pain as if "something wanted to come away." Examined her by the touch per vaginam in the recumbent posture; os high up, slightly patulous, soft. Omit oxalate of Cerium, give ¼ gr. morphia every two hours. Acet. potassæ gr. x, in infusion of Juniper berries, every 4 hours. Enema of warm water which gave great relief in the passage of fæces and flatus.

July 2. Had a bad night, vomiting returned and pain increased; pulse 100, skin hot, urine improved in quantity and color. Great distress in the left inguinal region. Examined in the upright posture, per vaginam; os high up, no sensation of pressure upon finger while held within the os, during the pain. Placed in bed upon back, explored the abdomen; to the eye, uniformly rotund, some larger within the last month; found in the left iliac region dullness under percussion, and the sensation of a hard tumor under pressure, was imparted to the fingers, while there was *slight tenderness*. Ordered an enema of warm water to clear the diagnosis of any obscurity in consequence of an unemptied lower bowel, and percussed the affected space again, found dullness absolute and comparative; circumscribed, clearly limited and well defined. Diagnosis, ovaritis with circumscribed peritonitis. Withdrew the morphia and gave Bromide Potassii, grs. xx, tr. opii. deodorata gtt. xv, every 2 hours. Hot linseed poultices to the abdomen, often applied. Infusion of Juniper, and grs. xv, of acet. potassæ every 4 hours.

July 3. Found her better, pulse 100, softer; had slept some, skin more pleasant; less pain. Placed ear over uterus without discovering a souffle, nor pulsation of fœtal heart. No vaginal discharge previous, nor any subsequent to this time. Determined to explore the womb with speculum and sound. Continue treatment.

July. 4. Passed restless night; pulse 115, quick; vomiting; urine more abundant, nearly normal; increased pain. Invited my partner, Dr. S. B. Mills, to explore the cavity of womb, which he did, the sound passing gently, and readily as it were of its own weight, to the fundus. Fully confirmed as to her non-pregnancy.

July 5. A repetition of the past 24 hours. Chloral grs. xx was administered every hour, then xxx grs. on up to 40 grains with hardly an appreciable benefit. Complaint was made of the hot poultices, and ice cloths were tried. She was fed on ice, ice-cream, beef tea, from the beginning. From this time on, to the day of her death, 19th July, her vomiting, pain, fever, etc., ran on with little alleviation or control by the means employed. The pulse rose from 115 to 120, 130, 140, by the 14th, when it rose suddenly to 165, very feeble, with alarming tendency to syncope, requiring powerful alcoholic stimulants, quinia, etc., and kept at this high rate till her death, a death from asthenia. Hypodermic injections were proposed but not employed because of her unconquerable prejudice to the practice.

Post-mortem conducted by Dr. Isaac Warren, of City Hospital. Effusion of lymph on peritonæum of entire left iliac region with adhesion; a large amount of extravasated blood, filling the pelvis and lower portion of abdomen, the removal of which revealed a fœtus in what seemed to be at first glance a ruptured uterus, torn edges slightly separated, but in fact the placental membranes adherent to the broad ligament of the left side of the uterus. Extra uterine fœtation

The question very properly arises, could and should the diagnosis have been made. Let me recur to the rational and physical signs. Rational signs, 1st, vomiting; this symptom is without any cause therefor, to be found either in impropriety of diet, or change of habit, or interference with daily routine, or mental disturbance (as in first seizure, June 9); 2d, cessation of menses for four months, succeeding a period of five years of perfect regularity, at the beginning of which time she had been confined; 3d, bearing down pains, creating a sensation like-unto something coming from her womb; 4th, prompt relief of the first attack from the use of oxalate of Cerium and morphia, and great relief at the beginning of the second attack from the same remedy.

Physical signs, increase of abdomen, (statement of patient) neck of womb shortened; pulpy, patulous. Uterine souffle undiscoverable, the same of fœtal heart; absence of anything appreciable to the touch, while the finger is inserted within the os, during the most violent "bearing down pains;" the free, easy, and unobstructed passage of the uterine sound to the fundus, slipping in as it were of its own weight.

Under the assumption that there was ovaritis with circumscribed peritonitis, and cellulitis, we have under delicate palpation a small, well defined tumor in the left iliac region, with pain definitely located thereat. The patient locates the trouble in said part. There is dullness under percussion, which is normal when compared with the corresponding side and its opposite; but it is absolute dullness. If, perchance, the dullness be increased by a distended bowel, we administer an enema and empty it; we now percuss again and find the dullness under percussion definite, localized and circumscribed, occupying a space described by a circle of four inches diameter.

Failing then to find pregnancy from the physical signs and drawn to that conclusion from the rational signs, I freely admit that I might have sought a conclusion of pregnancy in the possibility of extra uterine fœtation, *knowing what I know now;* yet I apprehend that its great rarity, the by no means uncommon number of states and conditions that simulate pregnancy; more than all my remote position from that of an adept in obstetric science and art would relieve me from any charge of remissness of duty to my patient. That the condition premised of peritonitis circumscribed, was correct, the post-mortem fully revealed; there was no ovaritis: the only other item overlooked, namely, auscultation of the fœtal heart, I confess my inability to test, and I venture the opinion, that there is but one man among us whose experience is so great, expert as he is, who would have sought the fœtal heart at four months. It is not necessary that I should mention the master, Henry Miller. Is it not probable that a suspicion of pregnancy extra-uterine would have found a lodgment in but a few minds?

The continued uncontrolled febrile manifestations, great heat of skin, thirst and frequent pulse, caused me to traverse the whole field of probable causes, with the conclusion merely that there was a profound toxæmia, the localization of which in the limited peritonitis was not sufficient reason for its protracted, and sustained duration, and for which I suggested some intra-uterine visitation, as additional cause; probably the primary cause, perchance a septicæmia.

The sudden and alarming prostration on the 14th, when the pulse ran up to 165 beats per minute, is the time I locate as the date of rupture of membranes and hemorrhage, by which hemorrhage we have the usual mode of death, viz: anæmia. The extreme prolongation of the case—three weeks—assures us that the death of Eliza Bibb was from syncope, and embraced both of its divisions, asthenia and anæmia.

ECLECTIC DEPARTMENT.

"Carpere et Colligere."

ART. I.—RECENT RESEARCHES ON TUBERCULOSIS. By J. BURDON SANDERSON, M. D., F. R. S. Physician to the Hospital for Consumption, and Assistant Physician to the Middlesex Hospital.*

I propose in the following pages to give an account of some of the more important results of the experiments which have been made during the last few years as to the artificial production of tubercle, to illustrate their bearing on questions of pathology, and to endeavor to bring them into relation with the teachings of clinical experience. I have first to state as clearly as I can what are the leading facts as to artificial tuberculosis, leaving out what is unimportant, taking in all that has a bearing on my subject, whether it results from my own observations or those of others.

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*My own researches as to artificial tuburculosis are contained in the

The literature of artificial tuberculosis is very extensive; for without reckoning limited inquiries, six complete series of researches have appeared in Germany, two in England, and two in France.

Artificial tuberculosis is most easily produced in the guinea-pig, next in the rabbit; with most difficulty in the dog. The results obtained with horses and cattle are as yet doubtful.* For three reasons the guinea-pig is preferable; (1) because it is absolutely free from liability to natural tuberele; (2) because it is little liable to acute inflammation; and (3) because it can be inoculated with absolute certainty. Artificial tuberculosis may be produced either by the inoculation of infective material or traumatically. My experiments show, that of all inoculated materials none is more certain or more active than material taken (as vaccinators say) hot from the diseased glands of a living animal already infected. The dose required is almost infinitesimal. If a deceased gland is squeezed into a little distilled water in a capsule, and the resulting slightly turbid liquid injected into the pleura or peritoneum, you are certain of results. I have inoculated with success in a great number of situations; most frequently in the subcutaneous cellular tissue, but also underneath the conjunctiva, in the brain, and in the serous membranes. For the purpose of studying the process, the serous membranes are so infinitely preferable, that I will confine myself to the results so obtained.

In April 1868, Dr. Wilson Fox and I, published for the first time experiments showing that tuberculosis may be produced in animals traumatically. I happened to have pre-

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Appendix to the Report of the Medical Officer of the Privy Council for the present year, and in that published in 1868. The reader will also find in those papers a detailed account of other researches on the same subject.

*The recent researches of M. Chaveau, not yet published in detail, show that artificial tuberculosis can be produced with the greatest facility and certainty in bovine animals.

cedence as regards the date of publication, but the experiments were made independently and at about the same time. I produced tuberculosis in the guinea-pig by the insertion of setons, Dr. Fox by the insertion of various non-tuberculous products, and also by setons. This result has since been abundantly confirmed by ourselves and by others, especially by Professor Cohnheim, who produced the required injury not by setons, but by the introduction of a variety of foreign bodies, in themselves harmless, into the peritoneum. In each case a cold abscess was produced around the foreign body as the primary effect, and tuberculous supervened.

What is the nature of the result produced, and what reason have we for identifying it with human tuberculosis? I shall consider the question at the same time with relation to the traumatic and infective form. The result of either process is to produce a definite disease—a disease which affects almost all the internal organs except the brain, and consists in the formation in them of nodules of new growth. This new growth has that peculiar structure which is common to all those diseased products which Virchow calls lymphomas, including scrofula, leucæmia, tubercle, several diseases of the lower animals, particularly the tuberculous disease of horned cattle, and farcy. Virchow calls all these lymphomas, because they all present a structure which is to be found in certain organs belonging to the lymphatic system. Virchow distinguishes lymphomas into two great classes, hyperplastic and heteroplastic. The hyperplastic lymphoma *par excellence* is scrofula, for this consists in overgrowth (resulting in degeneration) of the lymphatic glands. The heteroplastic lymphoma *par excellence* is tubercle, for it consists in the growth of nodules of material which have the same structure in parts of the body where no such structure exists. Leucæmia occupies an intermediate position, because in it we have hyperplasia of the spleen and lymphatic glands, heteroplasia of the liver, kidneys, and mucous membranes. I propose to use the word adenoid to characterize the tissue, for the following reasons:—There are in various parts of the body organs which, like the morbid growths in question, possess a structure exactly resembling, and, in fact, identical with, that of the follicles of the lymphatic glands. These organs are Peyer's follicles, of the *Trachomdrusen* of the conjunctiva, and the Malpighian corpuscles of the spleen. In addition to these, there are other parts of the body in which the same tissue is met with. Thus, in the neighborhood of the bronchial tubes in the lungs of the guinea-pig there are collections of adenoid tissue which lie between the bronchioles and their accompanying blood-vessels. In the pleura, immediately under the epithelium, there are gland-like, or, as I call them, adenoid bodies, consisting of collections of the tissue in question, surrounding tufts of capillary vessels, and covered with epithelium. In the peritoneum (omentum) there are similar bodies; in addition to which the vessels are surrounded by sheaths or cylinders of the same structure. Underneath the parietal peritoneum there are similar sheaths much less massive, but not less distinct in structure. In the choroid of the eye similar collections of adenoid tissue exist. Finally, during the last few months we have become familiar with the fact, that the medulla of bone consists largely of adenoid tissue, the relation of which to the blood-vessels is very remarkable. The arterioles terminate by losing themselves in the adenoid pulp, the veins commencing by wide sinuses which, like those of the spleen, are mere excavations in the pulp without distinct walls.

The reason why I have drawn attention to all these anatomical facts is this:—We have seen that all these structures agree in being formed of adenoid tissue; that tubercle (in the true sense), the new growth in leucæmia, the new growths in the tuberculous disease of cattle, have this in common—that they also consist of adenoid tissue; and that Virchow distinguishes tubercle from the rest mainly in that it is heteroplastic. I have now to say that the tubercle produced artificially is in a certain sense hyperplastic—that is, it is an overgrowth, not a new growth. Thus, the parts most apt to be affected by tubercle are those in which the structure in question exists naturally. The tubercle nodules which are formed in the peritoneum and pleura are overgrowths of nodules which existed before; the masses of new growth in the lung are overgrowths of masses infinitely smaller which existed before; the nodules in the choroid are agglomerations of pre-existing elements, and so on. In order to see this process, you should introduce into the pleura an infinitesimal portion of water impregnated with diseased gland, as already described. In a fortnight or three weeks you have your results. Suppose you take two guinea-pigs, and inject into the pleura of one, leaving the other untouched: In the former the pleura is studded with miliary tubercles, small, but visible to the naked eye; in the latter may be studied the adenoid bodies I have described. They have the same structure as the tubercles, which are simply adenoid bodies enlarged.

This process of overgrowth of pre-existing adenoid tissue is not, however, all that we observe in artificial tuberculosis. I have already stated that nodules are found not only in the serous membranes, but in the solid organs. In the latter, the constitution of the nodules is somewhat more complicated. I will take two organs to illustrate this—the liver and the lungs. In the liver there are two very distinct forms, the leucæmic and the miliary serous. In the first the new growth assumes precisely the character of leucæmic enlargement. The organ is erroneously enlarged in consequence of the growth of adenoid tissue around the bile-ducts. At the same time the epithelium of the bile-ducts grows with great activity, so that you have a combination of two things—overgrowth of adenoid tissue round the ducts, of epithelium within the ducts. In the serous form, miliary nodules of adenoid tissue grow underneath the serous membrane.*

In the lung there are also two forms. In tuberculized animals the lung becomes disseminated with minute nodules of lobular catarrhal pneumonia. Each nodule is extremely translucent. On making sections it is found that it consists of two materials entirely different from each other anatomically. On the one hand, the alveoli are choked with the ordinary roundish cells which are always found there.† The alveolar walls are thickened by the growth in them of adenoid tissue. As the disease progresses these masses of lobular pneumonia coalesce. Each mass caseates at the center *i. e.* becomes opaque and soft. The disintegration goes on until a vomica is formed. It is not necessary to go further. Let me now consider what is the meaning of the process I have been describing.

What is the relation between the tuberculosis produced by inoculation and that produced traumatically? In both we have to do with infection—that is, the disease progresses, not by continuous growth, but by the distribution or dispersion of infective material from one point. This point I call the focus of infection. I assume that the communication of the disease from a part primarily affected to the rest of the body takes place in the manner indicated, *i. e.*, that it is due to the conveyance of an infective material, and therefore that we may have to do with primary and secondary lesions. Now when you produce an injury of the external surface of such a kind as to bring about those internal changes which constitute tuberculosis, you do so by first producing local primary lesions which are of the same nature as those which result from inoculation. You produce sometimes an open sore surrounded by a base of induration; sometimes an abscess with indurated walls; sometimes no perceptible abscess, but a nodule of induration. It is therefore the induration which constitutes the primary lesion—the induration, which in both cases is the source from which the whole body is infected.

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*These nodules have been mistaken by Villemin and others for sections of miliary tubercles.

†These cell-like bodies which occupy the alveolar cavities are often called epithelial. Their relation to the epithelial lining of the alveolar walls is not known.

What is the nature of the infective material? On this subject various opinions are entertained by observers. Dr. Waldenburg holds that the infective material consists in fine particles of the inserted substance, and that these particles being introduced into the circulation form the nuclei of miliary granulations or growths. This may be called the capillary embolism theory. Cohnheim infers from his recent experiments that the infective material is always caseous pus. He founds this inference on the observation that in his experiments the primary lesion was always a caseous abscess.

As we have no means of seizing on the infective material, and submitting it to microscopical or chemical examination, the only way in which we can arrive at a conclusion as to its nature is that of studying the course which it follows in its distribution through the body. Let us take for the purpose, a case in which tuberculization is produced by injecting a trifling quantity of diluted lymph-gland into the pleura. The course followed by the infective agent in this case may be traced with some certainty. The morbid material is introduced into the serous cavity and spreads itself over its surface. It fixes itself, however, (so far as can be judged by the effects), to those parts of the serous surface where there are already masses or collections of adenoid tissue. The nodules of induration are therefore the primary lesions, the base from which the infective agent must be distributed to the rest of the body. How does this distribution take place? Obviously it must be either by the veins or the lymphatics. I am of opinion that both are concerned, and for the following reasons:

It has now been satisfactorily ascertained that the serous cavities are in fact lymphatic reservoirs. Both the pleura and peritoneum communicate freely with lymphatic vessels. This fact is proved, not merely anatomically, but also physiologically. Colored liquids injected into serous cavities during life enter the lymphatics. It is, therefore, scarcely possible for the lymphatic system not to be infected if the serous cavities are infected. In addition to this, we have the conclusive fact, that the bronchial lymphatic glands are enlarged, and eventually undergo all those changes which characterize scrofula. I do not think, as some other observers do, that the lymphatic capillaries are specially the seat of nodules. I have already given another account of their anatomical relations; and I have made definite observations as to the behavior of the lymphatic capillaries in those parts of the peritoneum where they can be best observed—particularly on the surface of the diaphragm. I have ascertained that the natural adenoid tissue which is there to be found underneath the serous membrane, although often existing in quantity, close to minute lymphatics, does not belong to them, but to the veins; and further, that the beautifully-defined miliary granulations which often cover the surface of the diaphragm are not in the course of lymphatics, as Klebs and Aufrecht maintain, but in the course of veins. In short, I hold that those observers have both mistaken veins for lymphatics—a mistake which is exceedingly easy. I am therefore of opinion that the tuberculous virus is taken up by the lymphatics at every focus of infection, and carried thence to the lymphatic glands; but that it is not the channel whereby it enters the circulation.

In every case the veins offer a much readier channel for the purpose than the lymphatics. Thus if we admit that the subserous nodules stand in the same relation to the venous radicles as the adenoid masses from which they spring, it appears certain that the facilities for the penetration of molecular morbid products, or even of corpuscles, must be very great; and it is further clear that, if any such material does enter the venous system, nothing can hinder its general distribution, whereas what it absorbed by the lymphatics is liable to be arrested in its passage through the lymphatic glands.

The third stage of the infective process obviously consists in the general distribution of the morbid material throughout the system by the arteries. This can be best understood by again referring to what occurs in the liver. If the infection is made into the peritoneum the surface of the liver becomes infected directly. It becomes studded with miliary subserous granulations. If the injection is into the pleura it does not at first become diseased at all, but eventually adenoid deposits are found round the ducts. The difference of form of lesion corresponds to the difference of mode of infection. Infection by the arteries gives rise to disseminated or infiltrated new growth in the depth of the organ. Infection by the peritoneum causes isolated miliary granulations on the surface.

In what way do these facts as to the course followed by the infective agent aid us in arriving at a conclusion as to its nature?

I hold, with Waldenburg, the material to be solid matter in a state of extremely fine division, but do not agree with him in separating tuberculosis from the infective process which constitute the specific infective diseases—*e. g.*, smallpox, scarlet fever, glanders. By proving that the infective material is necessarily solid, not in solution, we establish and strengthen the analogy with other infective diseases. It appears to me certain, from the experiments of Chauveau, that the contagium of smallpox is an insoluble substance, and exists in the state of minute particles; and that the contagia of vaccine, of glanders, and of ovine smallpox are of a similar nature. All our researches, therefore, tend to bring tuberculosis into the category of infective diseases; but on the other hand, they lead us to believe that the infective matter is infinitely more common, and that the conditions for its production are probably much more of frequent occurrence than those which generate the other morbid poisons.

I have now said as much as I have time to say about the results of artificial tuberculosis. I have endeavored to show that the disease produced is an effective disease, that its spread through the body is due to the presence in the circulation of an infective material, which may, I think, be nearly allied to the infective materials of other diseases of the same class, and that its anatomical resemblance to the so-called tuberculous diseases in man and other animals is so great that it is not possible to point out a difference.

I now proceed, by way of application, to refer to the most important of the doctrines which have been advanced of late years as to the nature of human tubercle, and to see how far the facts we have been considering bear upon them.

I need not observe that the whole of our modern notions about pulmonary tuberculosis date from Laennec. Not because he was the first that ever observed well on the subject, but because the discovery of auscultation so entirely altered the clinical aspect of the disease, that pathologists —unfortunately it must be admitted—forgot all that had preceded, or seized upon the new doctrine of tubercles as if it were definitive. There never was a more complete case of turning over a new leaf. It was not merely receiving the new, but clean forgetting the old as if it had never existed.

The new doctrine was this: That tubercle is a specific new growth, something not existing before, which grows in the affected parts; that the new growth is partly characterized by its physical properties, but mainly by the orderly succession of changes which it undergoes; that it is first gray and translucent, afterward becomes opaque, and finally cheesy. It was Laennec who originated the distinction we now constantly hear of between gray tubercle, crude tubercle and cheesy tubercle. These three conditions he thought so unvarying in their relation to each other that, if in any given instance the third were found, he considered that the first and second must have preceded it.

In its application to phthisis this theory is very significant. It implies that the disease consists in consolidation, followed by disintegration of the consolidated parts. In the discussion on the nature of the disease all turns on the conclusion formed as to the nature of the first consolidation. Laennec advanced, for the first time, the theory that the consolidation was due to the deposit in the organ of a new material, a new kind of morbid growth. This he called tuberculous material. He said it had nothing to do with inflammation, either chronic or acute; nothing to do with any other sort of consolidation except itself. How did it happen that this doctrine was so generally accepted? For reasons apparently which had no immediate relation with the question at issue. It was thought that Laennec knew more about it than any one else. He had discovered auscultation and percussion; he had taught men to make out by physical signs that phthisis existed long before the signs of marasmus were to be observed. In short, the specificity of tubercle was believed in because Laennec taught it.

It is well known that Laennec's greatest opponent was Broussais. For at that time Paris was the arena of pathological disputation, just as Edinburgh was at an earlier period. Just as Laennec excluded, so Broussais included inflammation in all his pathological ideas; but he distinguished two kinds of inflammation. He distinguished between acute inflammation, on the one hand, and those chronic indurations which result from continuous irritation on the other; and he had a theory about them, viz: that whereas acute inflammation is a disease of the blood capillaries, irritative induration is a disease of the lymphatic capillaries. In thus theorizing, Broussais went far beyond his facts, and was speculating about things beyond his knowledge, for at that time no one had seen a lymphatic capillary. To a certain extent Broussais' idea of lymphatic inflammation was a prediction or anticipation of what we now know; but after all it was a mere imagination. He saw that chronic induration was different in nature from inflammation, and therefore supposed it had a different seat. Nothing could be more natural or easy than to fix it in the lymphatic system.

Soon it appeared that Laennec's theory of specificity required some kind of support from facts. If tuberculous material were a specious of morbid growth, it must have characters by which it could be recognized. These characters were sought in two directions, chemistry and anatomy. Of the efforts made by chemists some twenty years ago to characterize tubercle, little need be said, for they came to nothing. The apparent results arrived at by anatomical investigation for the same purpose were much more considerable. When pathologists became possessed of the microscope, one of the first usage to which they put it was to try and make out the characteristics of diseased products—so-called exudations. In Vogel's Pathological Anatomy, Gluge's microscopical researches in pathology, and above all, in Lebert's Treatise on Tubercle and Scrofula, Laennec's doctrine was, as it were, done into microscopical language. According to Lebert, tubercle consists of minute bodies of a particuar size and form, from $\frac{1}{3500}$ to $\frac{1}{2500}$ inch in diameter. He made drawings of these corpuscles, and taught that by means of them the microscopist could distinguish tubercle from all other kinds of morbid product.

There can be no doubt that this great mistake of Lebert's exercised a considerable influence on pathological ideas about tubercle, and this for several reasons; most of all, because it brought the specificity doctrine of Laennec into harmony with what was then the new and prevailing pathology. Men had already made up their minds that tubercle was a specific something. Lebert gave that something an anatomical form. And it happened that the same process was going on in other departments of pathology. At the same time that the microscopists described the tubercle corpuscle they described the cancer cell and the typhoid cell—both of which were thought to be as characteristic forms of cancer and typhoid fever respectively as certain crystalline forms are characteristic of bodies of definite chemical composition.

It would probably be wrong to say that these early efforts of microscopical anatomy to elucidate pathogeny were mischievous, but they were certainly retrograde, for they were, after all, mere efforts to inspire with a new and fictitious life old and obsolete, and certainly mistaken, imaginations, by attaching them to actual anatomical forms, for Lebert and the rest saw all that they described, and many of us had them shown to us when we were students. The success with which this was done undoubtedly gave to the doctrine of specificity a much firmer hold on the younger men of the present generation than it would otherwise have had, and even now makes it much more difficult to combat it than if we had passed at once from the antagonistic teaching of Broussais and Laennec to that of Virchow, and had been able to jump over the confusion which the microscope at first introduced into pathological ideas.

Anatomically the cardinal fact is this: All cases of phthisis pulmonalis have this in common, that they commence with lobular induration, and end in disintegration and cavern-formation. In no generally understood sense can a case of acute miliary tuberculosis be said to be a case of phthisis. This broad definition of phthisis brings us back once more to Laennec. It was he indeed who first recognized the fixed relation between induration and disintegration as antecedent, and consequent; but he unfortunately extended the notion from the tissue to his "tuberculous material." The conclusion to which we have now arrived by anatomical investigation is this: There is no difference structurally between the induration of phthisis and the induration of chronic pneumonia. There are no anatomical elements in the hard parts of a phthisical lung which are not to be found in the hard parts of chronically irritated tissue in any other organ. Finally, there are no elements in the induration of phthisis which are not to be found in chronic bronchitis. It is even possible that there are no anatomical elements in the induration of phthisis which are not to be found in the healthy lung. We can not say this positively as regards man, but it is certainly so as regards the guinea-pig.

If we examine the unsoftened part of an ordinary phthisical lung, what do we find? Precisely the same structural changes which I have described in the guinea-pig—*i. e.*, changes of two distinct kinds: those of one kind having their seat in the alveolar septa, those of the other in the alveolar cavities. The change in the alveolar septa consists in the development of the tissue which I call adenoid-lymphoid corpuscles imbedded in stroma. The change in the cavities consists in accumulation of cellular elements. A diagram of the transparent nodules in the guinea-pig's lung represents as truly the early stage of tuberculous consolidation in man. In the structure itself there is nothing either specific or malignant.

In studying the development of consumption in man, it becomes more and more apparent that three distinct agencies are at work. Of these agencies one is so ill defined that we can only designate it a tendency. To some minds, I am aware, to talk of a constitutional tendency seems meaningless. I am not going to assert the possibility of disease existing absolutely independently of material change, but I do assert strenuously that disease may exist without its being possible to detect any anatomical or chemical basis for it. As regards pulmonary consumption, the fact of its so frequently attacking in succession several members of a large family shortly after adult, life affords to me a proof beyond the possibility of dispute, that something phthisical exists in each such member. In this sense I believe in the existence of latent phthisis, but in no other. No proof has yet been given that, in individuals in whom this tendency exists, the solids or fluids are differently constituted from others. The latent condition can only be described as a tendency or liability, the nature of which is open to speculation.

The second agency is irritation. The organs which are subject to injury are, above all, the mucous cavities which communicate with the external air. A common bronchial catarrh, not differing in any respect except its result from other bronchial catarrhs which terminate favorably, gradually assumes the characters of consumption. In the cases in which tuberculous processes originate from catarrhal inflammations of the genito-urinary organs, the same thing happens. Gonorrhea leads to prostatitis, prostatitis to scrofulous catarrh of the bladder, which creeps upward along one or both ureters, and produces induration and caseation of one kidney—that condition which is called renal phthisis. In both of these instances an indurative process, which ultimately becomes disintegrative—*i. e.* a tuberculosis—begins from a simple catarrh of irritative origin.

The third agency is that which I have designated throughout as *infection.* The word designates the fact, that whenever a chronic induration due to overcrowded corpusculation exists in any organ, it is apt to give rise to similar processes elsewhere.

Although this is the point which artificial tuberculosis serves to illustrate, the notion does not owe its origin to the results of experiment. It was distinctly formalized at least twelve years ago by Buhl, almost in the terms in which we are now disposed to accept it. Buhl, however, limited its application to cases in which there are miliary tubercles. He showed, in the first place, that in persons who die of that variety of fever which is characterized by the general dissemination throughout the body of miliary granulations (acute miliary tuberculosis), masses of induration which have remained in the body long enough to become caseous, are in the great majority of cases to be found; and *secondly,* that in those cases, in which miliary tubercles are sown over a much more limited region, as *e. g.*, when they are confined to a single organ, they also spring from old lesions.

Both of these doctrines of Buhl's are, I think, well established, and will be accepted by most pathologists, provided they are not overstated.

They do not, however, include the ordinary case of phthisis, for the instances of phthisis in which typical miliary tubercles are to be found, are comparatively very few in number. The position I wish to advance is that *infection* has to do with the development of ordinary consumption—in short, that Buhl's doctrine applies in a certain sense to the so-called infiltrated forms of induration as well as to the miliary.

The results of experiment, as I have said, help us to understand this. If inoculation had produced only miliary lesions, we might have been disposed to *limit* infection to such lesions. The facts are otherwise. By inoculation you get not only miliary granulations in the serous membranes and in the choroid, but interstitial or diffused lesions in the liver, lungs, and other massive organs—so that here interstitial induration is part of an unquestionably infective process.

By regarding the development of so-called infiltrated gray tubercle as infective, one gets rid of some difficulties. We are no longer compelled to accept the teaching of some of the French followers of Virchow, who restrict the term tuberculosis to what is called "granulie," or to draw too marked a line of distinction between cases of phthisis in which miliary granulations are present and those in which none can be found; or, with Niemeyer, to refuse to apply the term tuberculosis to any excepting certain rare forms of consumption.

As to the word tuberculosis, obviously it would be a great advantage pathologically to get rid of it, as having no anatomical or chemical basis. At the same time, it must be admitted that it has a practical value, as implying a particular kind of malignancy. This malignancy stands in close relation to the infection of which I have been speaking, and in particular, to that crowding together of new growth, whether catarrhal or adenoid, which is the essential character of an infective focus.

In other words, if *tuberculous*, as applied to any organic disease, means anything, it means destructive induration—*i. e.*, that the organ is first hardened, and then becomes softened and indurated. This, for example, is the only respect in which tuberculous disease of the testicle, of the kidney, of the bone, and of the lungs, all agree.

Here I must leave off abruptly. In conclusion, let me observe that, in my judgment, the question of specificity is not one of merely theoretical interest. The doctrine has, I believe, exercised an unfavorable influence both on the treatment of phthisis, and on the management of phthisical patients. It has led men to forget that consumption is influenced by the ordinary causes of inflammation, not only in its origin, but in each step of its progress; and that one most important aim in treatment must be to counteract this influence; not, of course, by returning to the antiphlogistic remedies of the past, nor indeed by any therapeutical interference whatsoever, but by bestowing on the treatment of acute catarrhal affections, whether of the pulmonary, intestinal, or genito-urinary mucous membranes, a great deal more care than has hitherto been considered necessary; and, on the other hand, by affording to the poor, when actually suffering from acute disease of the lungs, the means of placing themselves under protection without delay from the injurious action of cold and occupation. I hold that the principle on which hospital relief should be administered, for the benefit of those who are either liable to or actually affected with phthisis, is that of *prevention*, and that if hospitals for the diseases of the chest are to be of any real value, the regulations for the admission of patients ought to be so framed that all persons affected with acute disease, whether secondary or primary, may claim immediate admission into hospital, on the mere ground of urgent need, independently of the accident of a governor's recommendation.—*Edinburgh Medical Journal.*

Art. II.—The Use of Acetic Acid in Affections of the Conjunctiva and Cornea. By B. A. Pope, of New Orleans, Louisiana.

The acid used in the following experiments was uniformly of the specific gravity of 1,041 (No. 8). My experience in its use in other strengths is not sufficiently extended for the expression of an opinion upon its value.

At first I applied the acid by means of a soft piece of wood, sharpened to a very fine point; but subsequently substituted the smallest size camel's-hair brush. In making the application, great care should be taken that the brush should not hold too much of the acid, and it is well, also, to remove any moisture from the surface to which it is to be applied.

Its action in the strength indicated is that of a mild escharotic, when applied to the cornea or the conjunctiva, causing but moderate reaction and very transitory pain. As compared with the nitrate of silver, used in strong solutions or in the solid state, the pain and irritation produced are very slight. This is also true as regards its action when compared with that of the sulphate of copper. The epithelial slough falls away rapidly, and leaves a clean surface, which, as a rule, heals promptly.

In the following cases I found this acid to be a valuable agent:

1. In a case of *warty degeneration* of the palpebral conjunctiva.

The patient, a boy of twelve years old, had been treated for two years before coming under my care. The tarsal conjunctiva of the upper eyelids was almost entirely occupied by these growths, only the inner and outer portions of the lids having been free from them. They were packed closely together, and were flattened upon their surfaces where they came in contact with the eyeballs. The largest of the tumors was about one-sixth of an inch in length, firm in structure, and sprang from the middle of the lids. Here and there, toward the inner and outer canthi, there were small flat growths varying from the size of a small pin's head to a line in diameter. There was only moderate conjunctival irritation, and but little secretion of mucus. The corneæ were perfectly healthy, but the use of the eyes was unpleasant.

The growths were excised as closely as possible to the surface of the lids. They, however, so completely occupied the tarsal surfaces of the lids, that it was impossible to make the excision so as to leave a smooth surface. The tendency to reproduction was very great, and it was found necessary to cauterize the diseased surfaces with the solid nitrate of silver every day, for at least two months. At the end of that time, the right lid was well. The treatment for the left lid was terminated at the end of five months. During the latter part of the treatment the sulphate of copper was sometimes used. After the first two months, the nitrate of silver was generally applied every second or third day.

After three months, the patient again returned for treatment, the left lid being almost in the same condition as before I had commenced treatment; and the disease also commencing to show itself again on the right lid. I now determined to try the effects of acetic acid, without previously excising the growths.

The applications were made once a day, for about six weeks. In a week from the commencement of this treatment, the right lid was well. In from six weeks to two months, the left lid was also well. During the last week of the treatment, the solid nitrate of silver was used two or three times with benefit.

The pain was very moderate, and the irritation following the applications was very slight. As compared with the applications of the nitrate of silver, or even of the sulphate of copper, the difference in these respects was very great. The patient consequently expressed himself as being much in favor of the change in treatment.

In the latter part of the treatment, the whole thickness of the epithelial layer would slough in places, and this would be followed by a little hemorrhage and some increase in the amount of pain.

It is now about five months since the cure was effected, and there is no tendency at present on the part of the disease to return.

There are in such cases serious objections to excising the growths, and following this by the use of strong caustics. This treatment almost certainly produces an uneven surface, which causes chronic irritation, by the unequal pressure of the surface of the eyelids upon the balls. If strong caustics be used for a long time upon the growths, the violent irritation produced is liable to be prejudicial to the healthy conjunctiva and cornea. Acetic acid seems to answer the indications best, since its action appears to be in a great degree confined to the immediate points to which it is applied. In case the growths are isolated and large, and attached by a small base, excision is, of course, indicated. In this case the deeper tissues of the lid were beginning to be involved in the morbid process, and the tumors were closely packed together.

Each application of the acid caused the destruction of the epithelial layer in which the morbid process seemed to originate. As a rule, it did not slough at once, but upon the return of the patient in twenty-four hours, the epithelium had been reproduced. The acid was always applied very freely.

2. In the greatly relaxed condition of the conjunctiva of the cul-de-sacs with hyperthrophy of the epithelial layer which occasionally follows upon chronic conjunctival disease. I have frequently found this condition of the conjunctivæ in cases of chronic catarrhal affections occurring in orphan asylums, and, in some instances, they were very rebellious to the usual treatment. This condition renders the patient constantly liable to relapses. One case of this kind, in which a constant irritation was kept up by the condition of the conjunctiva of the upper conjunctival cul-de-sacs, was cured completely by two applications, after having resisted the usual treatment for weeks, without decided progress toward a cure. In this case, upon everting the upper lids, a large

flabby mass would protrude which had a macerated appearance.

3. I have found benefit in its *occasional* use in some cases of trachoma in the stage of development, where the neoplastic growths were *very superficial*, and where the usual treatment seemed for the moment to favor the progress of the disease. Its application should be confined to the granulations, the surrounding conjunctiva being spared.

4. In a case of inflamed pinguecula, where excision was declined by the patient.

5. In the hypertrophied condition of the lachrymal caruncle and semilunar fold in cases of pterygium. It is probably best to use it before operating the morbid growth, since the cure is favored by having the tumors free from irritation before operation.

6. In two cases of *calcareous degeneration* of the *epithelial* layer of the *cornea.*

In each of these cases both eyes were affected, and in both the disease was more advanced in one eye than in the other. The treatment was completed in only one of the cases. In this case the result was excellent in one of the eyes, and very unsatisfactory in the other. The eye which did well, was by far the worst, the patient not being able before treatment to read the large letters of signs upon the streets, and the eye having become affected with strabismus externus. The eye which was a failure in respect to the operation, did quite well after two or three operations in which the acid was used, and improved decidedly in the sight; but the last operation was followed by considerable irritation of the cornea and acute inflammation of the lachrymal sac. This last operation was performed with instruments, and without the use of the acid; so that the failure can in no way be connected with its use. In the cases reported by Bowman and Dixon, the disease had advanced so far that the calcareous mass could be removed in a continuous solid plate. In the cases treated by myself, the disease was in a comparatively early stage of development, and might easily have been mistaken for opacities resulting from a diffuse superficial keratitis. In fact, both cases had been so considered, previously to their having consulted me, and had been treated accordingly, without any effect upon the course of the disease. From two of the corneæ I obtained small, coarsely granular, calcareous plates; but the epithelial layers were mostly in a sclerosed condition, the cells still retaining their forms and proper relations when seen under the microscope.

The treatment was commenced by the application of the acid at the circumference of the diseased parts. After an hour or two, the sloughing mass was removed, and if the whole thickness of the diseased epithelium had not been destroyed, the application was renewed at once, with, however, greater care than in the first application. Before another application was made, time was allowed for the restoration of the epithelium and the subsidence of irritation. In some of the operations I first scraped away much of the epithelium, and then made a slight application of the acid to the remaining deep epithelial layers.

The restoration of the epithelium took place very rapidly, and with so nearly normal transparency that in the eye on which the treatment was successful, the patient could read No. 1 of Jæger's test-print at 7″ or 8″, while before the operation, with this eye, which was much the worse of the two, the patient could not distinguish the letters of large street signs, and the eye had in consequence deviated outward.

From the observation of the effects of treatment in these cases, I concluded that unless some other procedure than that with the knife, or by sloughing away the epithelial layer, be resorted to, the disease had best be allowed to run its course to a rather advanced stage before operative intervention.

7. In a case of dense opacity of the cornea, the margin of which reached the center of the cornea. This case I treated from the eighth day of an attack of ophthalmia neonatorum, complicated almost from the first by a severe attack of diphtheritis conjunctivæ. I first saw the case on the eleventh day after the birth of the child. There had been no treatment, and I found the cornea commencing to slough, and severe iritis already existing. The eye was saved with difficulty, and perforation of the cornea was prevented. A circular slough came away, about 1¼ line in diameter, and probably involving ⅓ or perhaps a little more of the thickness of the cornea. The healing of the ulcer and the condensation of the cicatrix was slow, on account of the unfavorable external and internal conditions present. At intervals, for some months, the various treatments usual in such cases for diminishing corneal opacities were used, but with unsatisfactory results. After some months had

elapsed without treatment, I commenced the use of acetic acid. Its application was confined to the dense opacity, and its immediate vicinity, where the opacity was very slight. At first the application was made once a day, for three consecutive days, so that an ulcer resulted from the treatment. This was allowed to heal, without interference. This treatment was repeated after the ulcer had healed, and all irritation had ceased. The application of the acid was made subsequently about three times, but each time only two applications were made. The opacity still remains, but is decidedly diminished in density, and somewhat also in extent. The healing of the ulcer took place under the most favorable conditions which will probably sufficiently explain the improvement. In support of this view, I might cite the case of a child, about three years old, who had a tolerably dense central opacity of the cornea, which sloughed away under the influence of a severe catarrhal inflammation of the conjunctiva. The inflammation produced iritis and considerable softening of the corneal tissue. After the cure of these inflammations, the ulcer healed with a remarkable improvement in the opacity. The first cicatrization had taken place while the conjunctiva was still inflamed, the disease having been left mostly to take its natural course. *Archives of Ophthalmology and Otology.*

ART. III.—PERIOSTITIS.

"Methodical." That was the word. It kept coming into my mind as I lay tossing in unrest with raging jaws. It was not regular toothache; but that worst form of suffering called *Periostitis*. The membrane investing the jaw-bone was in a state of inflammation, and I wondered what limit there was to human endurance. I smoked nine cigars (pressed Cabañas) in unbroken sequence. I scalded the skin off my mouth with kreosote, raw whisky, and spirits of camphor, and all the time "Methodical" kept repeating itself, and tortured me mentally as I tried to track back in my memory to the circumstance that had suggested it. Meantime the pain kept on. There was plenty of method in *its* madness. I thought of stories I had read of narcotic drugs and mesmeric manipulations, and then I remembered that some of my many impromptu advisers had suggested an application of ginger and laudanum. So I rose, found some strong Jamaica ginger and the laudanum-bottle, made a large poultice and tied it all round my chin. The dining-room clock began to strike. I knew it was midnight, but I counted the strokes and noticed that the pulsations in my aching gills accorded precisely with the clock-hammer. It was a dull, continuous throb, throb, throb, and seemed to resent the weight of wet ginger which was rapidly growing warm. I had been awake all the previous night, and knew that I should hear the big Shanghai crow in a minute. He was punctual sure enough, and crowed as if he were just twenty-one and had grown a moustache. His was an enviable lot, with no perplexing cares during the day, nothing to do but strut about the poultry-yard and dodge the gobbler, secure in the admiration of half-a-dozen hens, and no liability to *Periostitis.* I took opium once, under medical advice, and the effect was horrid. But I might hold a spoonful of laudanum in my mouth and try if it would not deaden this pain. So I took a sip, and Shanghai crowed again. Some one has said that this midnight crow is a ghost-signal. I am rather inclined to be afraid of ghosts when I am in health, but now—ha! ha! I should like to see forty of them streaming in through key-holes, down the chimney, under the door—any way. A man with a jaw as sore as mine is more than a match for a thousand ghosts with no membranes to cover the jaw-bones. Then I heard a distinct sound at the stair-door, and suddenly I remembered where I got that tantalizing word, "Methodical."

I came up to my chamber by the back stairway, and closed and locked the door. I went up two or three steps and recollected that there was a bolt on the door, so I went back and bolted it. I thought it was a work of supererogation, but concluded that it was well to be "methodical," though I was so demoralized by the incessant pain that I did not care a jot whether there was any door there or not. But now that I heard the noise at the door, I remembered that I had shot the bolt home, and recalled all my subsequent reflections. I got up and walked through the back corridor, and paused at the head of the stairs to listen. Some one was outside, trying to turn the key with a pair of nippers. I heard them slip off and click. My face stopped paining me, but the ginger burnt. Mentally, I was cool as a cucumber. This was no ghost business, but was decidedly burglarious. I heard a whisper distinctly. So there were certainly *two* visitors for me to entertain, if not more. No pain now. How much less pluck is required to *do* than to *endure!*

My father was a cavalry officer in 1812, and his sabre hung at the head of my bed. I slipped back to my chamber and donned part of my attire. I stuck my revolver in my waist-band and drew the old blade from its iron scabbard, and then went to the staircase to listen. I was a match for half a dozen, and had all the game in my own hands. Now to decide cooly upon the programme. If I made a noise my visitors would probably leave without ceremony, to return some luckier night. True, I might get a shot or two from the window, but I don't like to kill people if I can help it. My plan was to crack a bone—say the femur—and miss the big artery. Under a good light I could put a bullet where I pleased inside of a two-inch circle. So I decided to let my friends come up stairs and have it out with them in the back passage. But my "methodical" bolt must be drawn.

In my stockings I stole down the stairs and cautiously drew back the bolt. The nippers were grating and slipping on the key as I crept back. There was a turn in the staircase, and I retreated to the top just over the door, listened and waited, with the sabre tucked under my left arm and cocked pistol in hand. As the key revolved and the lock snapped open, I heard the Shanghai again. I also heard something thumping inside of my left ribs.

"There's a light overhead!" This was a hoarse whisper. Then a long pause, and I thought they would certainly hear the thumps at my ribs. Then the whisper again: "Go up Jim! I'll foller!"

As Jim emerged into the light I noticed his broad shoulders, and then a second muscular rascal came into view, and by Jupiter! a third! No time to pick out birds now, so I gave Jim a bullet right in his back where the dorsal vertebræ begin. He dropped with a curse, and the others came up two steps at a time. I pulled back the hammer for a second shot, but the chambers refused to revolve—some defect in the mechanism, I supposed. I dashed the useless pistol at the head of the second man, and then sprang upon him just at the turn of the stairs with uplifted sabre. He had a formidable-looking bludgeon in his hand which he threw up to parry my blow, but the old blade cut through the stick, and before he could wink I had "given point" and slipped the weapon through his right shoulder. The third villain had gained a step below me by this time, and caught my arm, pulled me down against the balustrade, placed his knee against my thumping ribs, and then peered curiously into my face.

"Periostitis, eh!" he said, and wrenching the sword from my hand he turned the point upon me, and ripping up my sore chin — wakened me. Shanghai uttered his fourth crow.

The taste of the laudanum was strong in my mouth, and the dull, buzzing sound in my ears convinced me that I had swallowed my teaspoonful in my fitful doze. The pain was back again "in force." All appliances had failed, and the horrid opiate that had turned into a thousand bees in my head did not stupefy me enough to make me callous. It was intolerable, and I had reached the limit of human endurance. I must go to the dentist and have half my jaw-bone taken out, if relief could be had no otherwise. No use to rouse the household; so I dressed noiselessly, got out of the house, and began my two-mile tramp. Dr. Pullerkin would be "disengaged" at this hour, I thought. How my head roared! I likened it to a bee-hive a little while ago. Now it was equal to forty steam saw-mills! I got to the Doctor's at last, and taking the bell-pull in my hand, I kept up one continuous ring, intending to work the nob until I fainted, or until a policeman should arrest me, or until old Pullerkin let me in. The last event occurred; a window sash went up, and the Doctor's head came out.

"Who in the mischief is there?"

"It is I, Doctor," I answered.

"Who are you?"

"Jones. Nearly dead with the toothache!"

"All right! Wait a minute." And in went his head.

My pains were gone again, and if I had not been such an ass as to tell my name I should have fled before the door opened. Too late! The old case-hardened wretch, who fattened upon the agonies of his kind, would follow me to my house armed with the implements of his craft, and take my entire head off rather than miss the job. While these thoughts passed through my mind, the door opened and Pullerkin appeared. I went in, walked up eleven steps, counting them methodically, and entered his slaughter-den. He pointed silently to a big chair, turned up the gas until it flared, and then took my roaring cranium into custody.

"Oh, dear!" he said, with the customary affectation of sympathy; "it has been aching you dreadfully?"

"Yes, Doctor, but it is quite easy now. Can't you put some stuff in it, and let me go home again?"

Pullerkin grinned. He was quite familiar with that style of address.

"My dear Mr. Jones," said the old rascal, "you had better endure a little more pain for a short time and be done with it. It will only take a minute."

"Work your devilish will then!" I answered in a rage. He grinned again, but promptly began operating. I knew exactly what he would do. I had been there before. He passed a sharp knife around the tooth, separating the gum from the bone; then took the forceps—Ah! the gas-jet was multiplied by a hundred, the walls of the chamber fell outward, the chair crumbled to dust beneath me—Shanghai crowed the fifth time, and I woke again.

Things were rapidly approaching a crisis by this time. If that rooster had been in Halifax I might have caught a nap, but now I was broad awake. I met Spiggins yesterday, and he spoke in high terms of chloroform. Eight times diluted. No harm to try it. I should like to take a good sniff of it and secure unconciousness. "Eight times diluted." That meant one part chloroform and seven parts alcohol. I had no alcohol pure and simple, but I had a bottle of whisky. I measured seven spoonfuls of it, added one of chloroform, dipped a cotton-bat in the mixture and bound it on my face. How sweet the odor! and how horridly it burned! I fancied it relieved me somewhat; anyhow I got a succession of cat-naps, and wore the night away. With the first glimmer of dawn I got up and went to my medical adviser.

"Sawbones," said I, "if your miserable trade is worth shucks, cure this face of mine."

"Nothing easier," replied Sawbones curtly. "Sit down here and let me look. Periostitis! that is the inflammation of the Periosteum—"

"Yes, I know all that gibberish," I answered rudely; "what I require now is relief."

"You shall have it. I wonder if old Wriggles is up? Go back to your house, and I'll follow in a jiffy."

"Are you going to cut anything?" I asked in some trepidation.

"No, no. Only a few leeches. Bless you, you'll not notice them. *Must* reduce the inflammation. You'll be all right in one hour." And he bustled out.

In half an hour Sawbones appeared, accompanied by a cadaverous old wretch with a little tin-box in his hand. They tied a sheet under my chin, washed off the various drugs, stuck a pin in my finger and smeared the blood over my jaw. Then Wriggles opened his tin-box and a black reptile poked out its head. No use to flinch. In five minutes I had a fringe of them hanging to my chin, and I could see them sucking and swelling. Presently they began to drop off, one at a time, and as they fell Wriggles collared them, stuck their noses into a salt-cellar, and stripped the blood out of them, manipulating them deftly.

"Spanish?" said Sawbones.

"Swedes!" Wriggles opened and shut his jaw with a snap. He was not at all attractive in appearance, but he had brought me such heavenly relief that I could have hugged him. I began to say something affectionate and complimentary to him, when he interrupted me in the strangest manner. He threw back his head, flapped his bloody hands on his lank hips two or three times, and shouted—

"Cock-a-doodle-doo!"

That was Shanghai's sixth crow, and it roused me enough to make me look at my watch. It was five minutes after twelve. I have heard of an opium sleep and now I know what this means.—*Eclectic Magazine.*

ANALYTICAL DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."—PLAUTUS.

ART. I.—ANALYSIS OF VARIOUS ARTICLES. Published in the Medical Times and Gazette, the British Medical Journal, the London Lancet and Dublin Quarterly Journal of Medical Science. (Original copies.) By Prof. JAS. M. HOLLOWAY, M. D.

Treatment of Ranula by Iodine.—Dr. Baillie, Indian Medical Gazette, February 1, directs that the sac be seized with a pointed hook and a large part of the cyst snipped off with scissors. The sac is then filled with iodine, which after a few minutes is allowed to escape, and its place supplied with oiled lint, which is renewed daily, after the sac has been cleansed.

Belladonna in Intussusception and Obstinate Constipation.—Dr. Baillie, same journal and same date, bears testimony to the beneficial effect of this drug in the ailments named above. He administers half-grain doses, combined with two or three grains of calomel, every two or three hours until relief occurs. No evil effects are likely to follow its administration.

Ether Spray an Auxiliary to the reduction of Femoral Hernia and Paraphymosis.—In Med. Times and Gazette, under caption "Irish Dispensary Jottings," Dr. Jas. L Wayer reports two cases in which the ether spray was employed with marked benefit. In the case of strangulated femoral hernia, the tumor was so sensitive that taxis was out of the question until the use of the spray reduced the size of the swelling, and its redness was diminished.

In the case of paraphymosis, after a few puffs the tumefaction suddenly subsided and the constriction was removed easily by the ordinary manipulation.

Cure of Ganglions on the Back of the Wrist.—Mr. Frederic S. Skey, in his fourth lecture, reported in the Lancet, Aug. 27, discountenances the old method of rupturing the sac by a blow with a book. He thinks that the cause of these ganglions may be referred to undue and excessive strain of the extensor muscles of the tendon on which it is found. His plan for the radical cure of these cysts, that doubtless weaken the power of extension at this joint, is to *completely* evacuate the contents of the sac by means of a broad-shouldered lancet; after which compression is made by adhesive plaster and a roller bandage, with sufficient firmness to bring the opposing cyst-walls into close apposition. The cure is effected usually in 48 hours.

Treatment of Burns by local Stimulants.—In the same lecture Mr. Skey discountenances the employment of *carron oil* in the treatment of burns, which form of injury he divides for the purpose of description into three degrees of severity, viz: "1. When the skin alone is the seat of injury. 2. When the areolar tissue is involved. 3. When all the structures of the injured part are implicated."

A half century ago, Dr. Kentish, of Bristol, enunciated the principle of local stimulation for the cure of burns and the relief of the attendant pain. Mr. Skey thus sums up his.

plan of treatment based upon his experience in St. Bartholomew's Hospital, and elsewhere, during many years, and also upon the appreciation of his teacher, Mr. Abernethy, who influenced the opinions of many hospital surgeons in regard to its value.

"A solution of nitrate of silver in a proportionate strength to the extent and severity of the burn. I have used the solution in the strength of from five to twelve or more grains to the ounce of water. The lotion would, of course, be modified by the age of the person, five grains sufficing for a child. If the whole surface be freely bathed with the solution and entirely covered up in cotton-wool, and an opiate be administered in a glass of brandy and water, the chilliness will be relieved and the future management of the case will be well started."

Digitalis in Delirium Tremens.—Dr. Alfred Wiltshire, in the Lancet, Aug. 29, reports five cases of the malady named above, successfully treated by the employment of half-ounce doses of the tincture of digitalis. In every case the preceding treatment by opiates, relaxants, and anodynes had signally failed. One dose of the tincture—a half-ounce—induced sleep in less than thirty minutes in each case. Case No. 3, was under the doctor's care on two occasions. During the latter of these Dr. Russell Reynolds suggested the probability that the alcohol contained in the tincture had been the therapeutic agent during the previous attack. Whereupon Dr. Wiltshire administered a half-ounce of proof spirit. The result of the experiment proving purely negative, a half-ounce dose of the tincture, as before, was followed by refreshing sleep and speedy recovery.

CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

Art. I.—Lessons from the Medical Clinic at the "Hospital de la Charite," given by S. Jaccoud, Assistant Professor to the Faculty of Medicine at Paris,

Physician to the Hospital St. Louis; Chevalier of the Legion of Honor; Corresponding member of the Royal Academy of Science of Lisbon, and of the Medical Societies of Berlin, Vienna, Würzburg, etc. Containing 29 Wood-cuts and 11 Chromo-lithographs.

[Translated by Dr. J. D. Jackson, of Danville, Ky.]

Hæmoptysis in a Patient Suffering with a Pulmonary Lesion—Difficulties in Diagnosticating the Nature of this Lesion—Symptoms Viewed with Relation to the Circulatory Apparatus.

Signs of Aneurismal Dilatation of the Aorta—Beatings and Double Clappings—Importance of the Absence of the Souffle—Diagnosis Direct of the Lesion—Diagnosis Indirect, or by Exclusion—Rectification of the Symptomatology of Aortic Aneurism—Mode of Production of the Physical Signs.

Complement to the History of this Patient—His Aortic Lesion—His Pulmonary Lesion—The Pseudo-cavitary Stethoscopic Phenomena.

Gentlemen: A young man, twenty-one years of age, has entered our service, (St. Charles Ward, No. 16,) who for twelve days has been spitting blood, which commenced with him suddenly, while in full health. A brick-layer's boy, this individual lifted and bore heavy burdens, and daily did work unproportioned to his naturally weak constitution. However, despite the fact that for four years he has been given to this hard work, he has all the time enjoyed excellent health, and it is not without a certain emphasis, that he affirms that he was never stopped by the slightest indisposition. Six days before his entrance into hospital, while at the wine-shop along with some of his companions, without pain, and without any coughing, he found his mouth full of blood; during all that day, he, in the same manner, spat up many mouthfuls of blood, but this circumstance did not hinder him from working as usual. On the next day, nothing happened; but on the following day, a fresh spitting of blood occurred early in the morning, continuing until evening; and being renewed on the next day, persisted with a gradual diminution, during the four following days. Then, the boy coming into hospital, he had had two attacks of hæmoptysis, at intervals of thirty-six hours, and the second, the commencement of which dates four days back, continued still, when we saw the patient. But it was very slight; some bloody spots alone marking its existence, and, according to the information furnished by the young man, it was clear that for the two past days the expectorated liquid had completely changed its nature. In the beginning, there was red and frothy blood, but, by degrees, the tinge became deeper, the frothy character was effaced, and we now find in the spittle only a black liquid, perfectly fluid,without any tendency to coagulation, and without any appreciable commingling of mucus with it.

Only to judge by the physical modifications of the blood, it was clear that the hæmoptysis had presented two successive phases: during the first two days, the blood had been cast up, just as it had been thrown into the bronchi; hence its florid character and coagulability; then, after that, the expectorated blood lost these characteristics, and it showed by its black color and fluidity a more or less prolonged sojourn in the bronchial extremities and the alveoli of the lung. There had then certainly been in this boy a single broncho-pulmonary hæmorrhage; a portion of the blood was immediately thrown up; the other portion undergoing coagulation, has only by degrees been expectorated; this is the only possible explanation of the tranformations undergone by the blood in the second period of the hæmoptysis. This second period continued during the four days which followed the arrival of our patient into our service, after which every trace of blood disappeared from the sputa, which, otherwise not very abundant, presents us to-day a purely mucous character.

This accident, furthermore, has had no influence upon the health of this boy; he has never had fever, he has never experienced any difficulty in his respiration, he has scarcely coughed, he seems as strong as in the past, he eats well, he sleeps well, and as he sees that his spitting of blood has ceased, he only asks to be allowed to quit the hospital, and go to his work.

What now has been the cause of this sudden hæmoptysis, the phases of which I have exposed to you? By reason of the age of the individual, it is a tubercular lesion of the lung that we ought first to think of, and an examination of that organ shows us, indeed, that its tissue has undergone a profound alteration. The left lung is perfectly sound, the respiration is full and soft, as well at the summit as at the base; there is not a trace of abnormal sound, the sonorousness is everywhere natural. But, on the right, the result is otherwise. In all the superior portion, in front, upon the side, and in rear, we find an absolutely complete dullnes, with a total loss of elasticity beneath the finger; it really seems as if one struck a block of stone; the limits of this dullness exactly correspond to the superior lobe of the lung; in the dull region, the thoracic vibrations are evidently exaggerated. In the rest of the chest, the sound is normal. Auscultation yields, on a level with the dullness, a tubular souffle of rare intensity, and a striking bronchophony, non-articulated; the phenomena have identically the same characters throughout all the extent of the dull zone; no râle is perceptible, even on making the patient repeatedly cough.

It is not difficult to pass up from these signs to the physical condition which gives them origin; the superior lobe of the right lung is absolutely impermeable and indurated; observe the dullness, the souffle, the bronchophony and the vocal vibrations; the induration is homogeneous and compact; observe the absence of the râles. But it is not in the same way, near so easy to determine the nature of the induration. The idea of tubercular induration naturally presents itself to my thoughts; but, in considering it, I run against many circumstances, difficult of reconciliation with this presumption. The lesion only exists on one side, and it has invaded the entire superior lobe, with the confluence necessary to transform it into a hard mass, homogeneous and impermeable; despite the gravity of these disorders, despite the initial hæmoptysis, he has not the least sign of bronchial catarrh; such are the difficulties proceeding from the local state. They still increase when I come to consider the general condition. The patient presents no suspicious antecedent; he has never coughed, he has never been subject to colds, has never had dyspepsia, and still less diarrhœa or vomitings, no fever of an evening, no nocturnal sweats, no emaciation or enfeeblement. There, gentlemen, is an assemblage of symptoms which certainly does not square, in a medical point of view, with the hypothesis of an immense tubercular lesion of one of the lungs.

Now that I have agitated these contradictory evidences, in order that I may settle down in my judgment, I proceed to a new examination of the patient, and I establish not without surprise another phenomenon which opens up a new way in our investigations. In the sub-clavian region of the right side, I hear two perfectly dry bruits, perfectly rhythmical and identical with the two sounds of the heart; this identity is so complete that I can not hesitate to pronounce these bruits membranous clappings (*claquements membraneuses*), but this in the meantime impresses upon me the obligation of assuring myself before passing on, that it does not proceed from a transposition of the heart; it is for you to say how these two tones are like cardiac bruits; in addition I recommend you all to establish for yourselves in the patient these phenomena and those of which I shall speak to you very soon.

In no point of the præcordial region does there exist any swelling, any pulsation appreciable to the eye, but it looks as if the heart is a little lowered, so that the apex beats exactly in rear of the sixth rib; percussion and auscultation leave no doubt about the presence of the heart in its ordinary seat, and that the liver occupies the right hypochondrium; there can then be no question about the transposition of the viscera.

Rid of this first point, which you ought never to neglect in such a case, we ought to take still another precaution before attaching any pathological signification to these clapping sounds. We ought to assure ourselves that they do not result simply from an increase and transmission of the normal sounds of the heart; this obligation, furthermore, resting the more imperious, inasmuch as we have here a condition eminently inclined to favor the propagation of sound, to wit: the induration of the right lung. It is therefore necessary to consider this very closely. It is what I have done, and for three reasons which I shall adduce, I have concluded that the bruits perceived on the right are not the normal cardiac tones.

The first reason is furnished by a mode of appreciation which I have pointed out to you in the preceding lecture; the bruits of the right have the same rhythm, the same regularity as those of the left, and they are a little more feeble, but have not the same timbre nor the same tonality. They are louder and clearer, especially the first of them, and they are less grave in the musical sense of the word. Now I have told you that a bruit transmits itself with a variable force, but with its timbre and its primitive tone.

The second reason is drawn from the two maxima. Auscult the apex of the heart over the sixth left rib, and you will hear the two tones of the organ proceed upward obliquely toward the middle third of the sternum, and they become faint beneath the ear, to increase anew on going from this point up to the second right intercostal space, where you perceive at its maximum the two abnormal clappings. This can not be then the result of a simple propagation.

My third reason, while less peremptory, merits, however, being pointed out. The induration of the right lung occupying the whole of the superior lobe, the bruits transmitted ought to be heard as well in rear as front. Now you may auscult with all possible attention the interscapulary region of our patient, and it will be in vain, for you will hear nothing which recalls the two bruits perceived before and to the right.

Thus the two clappings which we perceive in the second intercostal space of the right side, do not result from a transposition of the heart, and they do not proceed from an unusual transmission of the normal cardiac sounds; they are bruits originating in place at the point even at which they are heard, and we can, without fear, now occupy ourselves in searching out the cause. With this aim we ought first to study carefully all the characters of these bruits, after which, we will examine whether or not they coincide with any other significant phenomenon.

In telling you that these bruits merit the appellation, *clapping*, I have already indicated to you their fundamental characters; they are well detached bruits, bruits of percussion, analogous to the tones of the heart. These two clappings are not perfectly like each other: the first is the longest and dullest; it impresses you at once as if it were produced by the stopping of a spring, since it does not cease suddenly, but diminishes gradually; the second, separated from the preceding by a little silence analogous to that of the heart, is on the contrary of a remarkable abruptness and clearness. After these two bruits comes a silent interval, like the *grand silence* of the heart, after which the double conjoined clapping reappears with the same characteristics. The first of these two sounds precedes a little the radial pulsation.

Observe that with reference to the clappings themselves, the coincident phenomena are of high importance; they are furnished by palpation and by view.

When one applies the palm of the hand flatways over the internal portion of the right second intercostal space, he perceives two associated beats like the two bruits; the first is more prolonged than the second. These strokes are extremely limited; they are not appreciable except at the precise point which I have indicated. I have marked it upon the thorax of the patient, with the crayon of nitrate of silver; but at this point here, these alternate movements present all the clearness desirable. If thus one of the hands is applied over this focus of the strokes, and the other is placed over the præcordial region, it is easy to establish the fact that the two upheavals are not isochronous; the cardiac systole precedes by an infinitely small quantity, the expansive movement of the second right space; a complementary explanation teaches us in return, that this movement precedes a little the distention of the radial, so that on reuniting these two observations, you will arrive at this very important conclusion: the first abnormal beat is intermediate to the cardiac systole and the radial pulsation; it succeeds to the first, and precedes the second.

Palpation reveals still another phenomenon, which speaks very highly in the same way as those preceding; this is a vibratory quivering or thrill, which I can not better describe than to compare it to the thrill one perceives under an aneurismal varix; but this trembling is not cutaneous, it is frankly intermittent, and mathematically coincides with the first pulsation. You have already perceived this thrill, in simply applying the hand upon the point designated, but you will perceive it infinitely better with a single finger placed lengthways in contact with the intercostal space.

When standing near the patient and we examine his chest, glancing up and down over the focus of the bruits and abnormal beatings, nothing is demonstrated, absolutely nothing; and if we confine ourselves to this mode of examination, without doubt we remain deprived of a very interesting element, or rather wrongfully increase what is a defect. But, have recourse to the process advised by Greene; kneel down beside the bed in such a way that your visual ray may be sensibly on a level with the anterior thoracic wall, and then look attentively at the suspected point and you will then establish a double pulsation, which completely escapes any other examination. These visible pulsations are similar to, and isochronous with the beatings perceived by the hand: the second is very brief; the first does not simply represent a simple upheaval, it is an upheaval with a gentle undulation. More limited still than the beatings, these pulsations are not appárent beyond a very limited extent; one may cover with a fifty centime piece, the point in which they show themselves.

To resume, gentlemen; our patient has, so to say, two beatings of the heart in his chest: the one on the left, with its ordinary characters and extent; the other on the right, in the second intercostal space at two fingers' breadth from the lateral border of the sternum, presenting in a limited and less marked manner, all the phenomena of the first; there is here a center of pulsations appreciable to the view, a center of beatings sensible to the hand, a center of clappings perceptible to the ear. There is nothing, peculiar, however, in either the vessels of the neck, or in the radials.

In presence of an assemblage of symptoms so clear, and which so complementing one another, all converge in the same direction, there is certainly no place for a differential diagnosis: the conclusion forces itself upon us, that we have to do with an arterial lesion, with an aneurismal dilatation seated more or less deeply in the chest, on a level with the second right intercostal space. The pulsations evident to the eye, the vibratory thrill perceived by the hand, suffice to demonstrate it, for these phenomena are not perceived over any other point of the arterial system, and our patient has no aortic insufficiency; the absence of this complication, so frequent under such circumstances, greatly facilitates the conclusion. But, in cases analogous to this which we have under our eyes, the physical signs which have dictated our judgment, are sometimes insufficient; the physician but incompletely enlightened by them, hesitates, and dares not venture a conclusion; it will then be useful to show you alongside the direct diagnosis which I am formulating, the progressive march which ought to follow here the indirect diagnosis, or that by exclusion.

The local phenomena which we have analyzed, being duly established, three possibilities alone can be wished by way of accounting for them: it is either a non-arterial intra-thoracic tumor, which, because of its situation renders perceptible the usually invisible pulsations of one of the great arteries of the chest; or it is an intra-thoracic non-arterial tumor, but pulsatile of itself, or it is an arterial lesion, an aneurismal dilatation.

Remark before all, gentlemen, that in our patient, and in all similar cases to his, the two first hypotheses ought never to be left out. They appertain, indeed, to the diagnosis of old thoracic aneurism, and go largely toward establishing a tumor in the chest; then there presents the question of the nature of the tumor, and the two preceding presumptions ought to be the object of serious examination, for it is in this last step of the diagnosis that the greatest difficulties are accumulated. But in our young man, there exists no intra-thoracic tumor, the physical phenomena are localized within the very small space which I have indicated to you; over this precise point the sound is dull, but beneath and to the inside of this point the sonorousness is normal; and if outside and above this focus you have dullness, it is that of the upper lobe of the lung, for it is continuous without any line of demarcation with the sub-clavian and axillary dullness; in all this zone, auscultation yields abnormal respiratory sounds, which resolve themselves in the clearest manner, along with the membranous clappings of the pulsatile point.

But, abstracting these fundamental considerations, the symptoms, such as we perceive, are absolutely irreconcilable, either with the idea of a tumor acting upon a large artery, or with the hypothesis of a tumor pulsatile of itself.

Suppose a hard production, a tumor, situated in front of the aorta, and lifted up by it, so as to project, following in isochronous rhythm the arterial beatings, exhibiting itself in the soft parts of the second intercostal space at a limited point, you can very well have, to the ear, the two normal aortic clappings, transmitted and exaggerated by the product interposed, playing the rôle of a conductor and sounding-board; but this is all of the resemblance. You will have a sudden and direct upheaval, without expansion, without any undulation, and the second pulsation will completely fail. The same will be the case with the thrill, or vibratory quiver, which, in the supposed case, will necessarily be defective. Admit, on the contrary, a solid tumor, more deeply situated, in rear of the aorta, and pushing the vessel, from behind, forward, you may have the vibratory thrill, but you can have no more than one pulsation; besides, there would certainly be a souffle in place of the membranous clappings, because of the antero-posterior compression of the artery, and the diminution of its caliber. Finally, in each of these varieties, because of the anatomical connection of parts, there would be signs of compression, either on the side of the vena cava superior, or on the sides of the right bronchus.

As for the non-arterial, self-pulsatile tumors, the vascular cancers, they can give place to an expansive pulsation, with progressive retraction; they can even, in certain rare cases, give a sensation of thrill to the hand, but never, never, indeed, do they become the seat of the clapping bruits; it is invariably the *bruits de souffle* which are produced in them.

Such is the diagnosis indirect, or by exclusion; it conducts us to the same result as the diagnosis direct, and each may alone be deduced from the physical phenomena perceived at the focus of pulsation; but it will not be the same if you will think well about it, if we had there the souffle, in place of the clappings; that which actually makes the case clear, that which permits us to judge categorically, and without reservation, is just this absence of the souffle. For a moment, doubtless, this proposition seemed to you very paradoxical, but the preceding analysis, I think, in your eyes fully justifies it, for you have seen that the negative character has freed you entirely from the most difficult obligations of the differential diagnosis.

It is certain that our young man is affected with an aneurismal lesion; it is not less certain that this lesion is of very small volume, for you can measure there the extent of the focus in which the bruits and pulsations are perceived, and this focus is not more than a centimeter square. As to the artery involved, there is no possible doubt. This is the aorta, at the spot where it corresponds to the second intercostal space of the right side; that is to say, after its emergence to the right, and in rear of the pulmonary artery, and before the commencement of the arch. This is then the ascending aorta, properly so called, which is the seat of the aneurismal dilatation, and as there are already pulsations visible to the eye, although the alteration (I repeat it), may not be very large, it is permitted, furthermore, to make a more precise statement, and to localize the dilatation upon the anterior face of the aortic cylinder. The point dilated can be distended in rear and front, and, as the artery is in this place more superficial than in all the rest of its course, a very small projection of the wall is sufficient to produce these limited pulsations appreciable to the eye and the hand.

Independently of the situation of the focus, another proof shows so clearly that the lesion occupies the ascending aorta anterior to the origin of the right brachio-cephalic artery, This proof is the perfect similitude of the two radial pulses. You can demonstrate it in the hand, and better yet in the two sphygmographic tracings we have here.

TRACING NO. 15—RIGHT RADIAL.

TRACING NO. 16—LEFT RADIAL.

Remark the little pulsation which suddenly interrupted the line of descent. This phenomenon, which is simply the exaggeration of the normal dicrotism, is precisely due to the aortic ampulla, the sudden reaction from which, after the systole of the heart, provokes a second undulation of the blood column.

I have repeatedly pointed out the entire absence of souffle at the focus of the pulsations, and far from seeing a motive for hesitation, I have this fact in support of my diagnosis; I would call your attention to this point of semiology. At the time of Læennec, and after him, it was admitted that aneurisms of the ascending aorta and of the arch, give origin to simple pulsations, and a simple or double souffle. Now, this proposition, which was classic, can no longer be accepted; it embraces two errors: the beatings are generally double, and in place of the souffle there are generally heard two bruits of percussion, two membranous clappings, more or less resembling the normal tones of the heart. Absence of the souffle is the rule at the beginning of the lesion, all the while that the wall of the pouch, no matter how great may be the volume of this latter, has preserved its natural elasticity, and the communication with the artery is widely open, and presents no rugosities upon its circumference. These conditions are never better realized than in what is called true aneurism, formed by dilatation, without rupture of all the tunics of the vessel; so that when an arterial dilatation offers no other phenomena than the two pulsations, and the two bruits of percussion, there are strong probabilities of a simple, uniform dilatation, (*ectasie*), without rupture. I don't doubt that there may be a lesion of this kind existing in our patient, for with him the absence of souffle takes away from the existence of the vibratory thrill a yet more positive signification. Nevertheless, this negative character is not exclusively peculiar to true aortic aneurism, common aneurism, or mixed external aneurism, can also present it, but in such a case the absence of souffle is ordinarily temporary; when the difficulty has progressed at a given moment the fact can be established that the tones, or clappings have given way to make place for the souffle. True dilatation, on the contrary, may kill by the accidents of compression peculiar to aortic tumors, without producing any other bruit than that of the characteristic double clapping.

One of the most remarkable examples is that which has been reported by Watson; it happened in a grown-up man, who presented on the right side of the sternum, but in an extent very much greater than in our patient, pulsations and double bruits, without trace of souffle. Watson had diagnosticated according to this an aneurism of the ascending aorta, whilst a surgeon of Paris, Sanson, passing through London, denied the existence of this lesion, invoking the absence of the souffle. Later, the patient succumbed, after having presented, up to the last moments, the two clappings without souffle; the autopsy showed a considerable dilatation of the ascending aorta, from its emergence from the pericardium, up to the origin of the brachio-cephalic trunk, exclusively.*

These observations, which profoundly modify the symptomatology and diagnosis of aortic aneurisms, ought to take the place of the erroneous propositions current at the time of Læennec; in 1834, Stokes pointed out the clapping without souffle as being the only stethoscopic sign of aneurism of the aorta; in 1836, Greene contributed observations confirmatory of these new views, and Gendrin, in 1853, submitting the question to a profound study, showed that in aneurism of the ascending aorta and its arch the clapping is the rule, and the souffle the exception; he insisted much more than had ever been done up to that time, upon the double pulsation of the diseased artery, and four years after Bellingham declared himself of the same opinion, and in the meanwhile sought to give a satisfactory theory of the

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*Watson, *Lectures on the Principles and Practice of Physic*, London, 1843.

second aneurismal clapping.* This is a point which is today still *sub judice*. The first one is not free from difficulties; it is evidently due to the sudden distension of the aneurismal ampulla by the blood wave, which enters here after the cardiac systole; this first bruit is then necessarily intermediate to that systole and the radial pulsation. As for the second clapping, which precedes by an infinitely small interval, the clapping of the sigmoid valves of the aorta, the two principal theories presented to us, are that of Bellingham, and that of Lyons.† According to Bellingham, the second clapping, always more feeble than the first, results from the regurgitation into the sac, at the moment of the diastole of the heart, of a certain quantity of blood drawn from the great arteries which originate from the arch of the aorta; under the influence of this reflux, the wall of the pouch is distended anew, hence the second bruit and the second pulsation. It is because these conditions of reflux do not exist in the abdominal aorta, that aneurism of this artery presents only a single clapping.

In the theory of Lyons, which does not sensibly differ from the more ancient interpretation of Gendrin, the second clapping is attributable to the sudden and active reaction of the pouch after its distention by the cardiac wave; one can thus comprehend how this bruit shows itself in false aneurism, as well as in true, provided that the wall has preserved its contractility, and sees beside this, that the second beating will be in addition more marked as the pouch approaches more toward a spherical form; if the diverticulum is very

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*Stokes on the Diagnosis of Aneurism, (*Dublin Med. Journal*, 1834.) *The Diseases of the Heart and the Aorta.* Dublin, 1854.

Greene, *Researches on the Symptoms and Diagnosis of Aneurismal and other Tumors in the cavity of the Thorax.* (*Dublin Journal of Medical Science*, *X*.)

Gendrin, *Sur le diagnostic des anevrysmes des grosses arteres.* (*Revue Medicale*, 1843.)

Bellingham, *Dublin Med. Press*, xix, 1848.

†Lyons, on the Motions and Sounds of Aneurism. (*Dublin Quarterly Journal of Med. Science*, ix. 1850.)

long, as is sometimes the case in simple *ectasie,* or dilatation, the second stroke can fail, although the second clapping makes itself heard.

It is not necessary to adopt upon this subject an exclusive theory, but if it should be necessary to choose between the two preceding, I would range myself more fully by the side of Lyons; in admitting with Bellingham that a regurgitation is produced in the sac by the sub-clavians and carotids after the systole of the heart, it is necessary to prove that this reflux can give place to a clapping and a pulsation, and as we do not see anything of the kind in the otherwise well pronounced reflux of aortic insufficiency, and as on the other side the existence of a second clapping, and a second pulsation in the aneurism is positively subordinate to the state of the wall of the pouch, I think that it is the active reaction of this last, which is the principal cause of the phenomenon.

Lay aside these purely theoretical discussions, and let us look another time, at the practical fact: forget the old established relation between aneurism and the *bruit de souffle,* forget, also, the erroneous proposition touching the simple beatings, but in return, retain this: when the heart being in place, there exists in the chest, over the track of the aorta, a second focus of pulsations and double clappings, and a regular rhythm, it is the place to admit the existence of an aneurismal dilatation of the artery; these phenomena when united, are a certain sign, and the extent of the lesion, is likewise proportional to the pulsatile focus. If the beatings are simple and not expansive, if there is a souffle instead of the clappings, the judgment is much more difficult, for it is then necessary to count, along with all the causes of error, those resulting from the pulsations transmitted, and the vascular compressions. From this point of view, the case which we have studied is one of the clearest type because of its simplicity, since the arterial lesion reveals itself clearly to us by the totality of the physical signs, although by reason of its small extent, it has not up to this time given rise to any subjective symptoms.

The knowledge of the aortic lesion with which our young patient is affected, increases our hesitation on the subject of the pulmonary alteration, which we discover in him. I confess that I can not make up my mind to admit the existence of a tuberculous solidification *of the entire superior lobe* of the right lung, in an individual the rest of whose respiratory apparatus is perfectly intact, and who presents no disturbance of health; I recoil before this conclusion which seems to me anti-medical, and I am the more inclined to attribute the pulmonary hæmorrrhage to the hæmorrhagic nuclei, the formation of which may be favored either by the aortic lesion, or by the daily exertions which the boy is obliged to undergo. I am not ignorant of the objections to be raised to this view; we know, and I have insisted upon this point, that the aortic dilatation is but slight, and it is difficult to conceive that it could bring on pulmonary hæmorrhage, when it has not produced any other accident; on the other side, the impermeability, the solidification of the lobe being total, it is necessary to admit a complete confluence of the hæmorrhagic cells, and this circumstance is still contradictory with the integrity of the general state; in absence of every rational sign of tubercles (the voice even is not modified), in the absence of every hereditary antecedent, in the absence of all those hygienic conditions which favor the development of tuberculization; finally by reason of the extent, and the particular localization of the lesion, the other hypothesis appears to me the most reasonable, and I think ought to settle me, in attributing the most considerable portion of the pathogenetic influence, not to the alteration of the aorta, but to the character of the work of the individual.

I am, in a measure, gentlemen, to complete to-day, after six weeks interval, the *exposé* of this case. This is what has happened. About ten days after the conference of which he was the subject, this young man felt himself sufficiently well enough to take his departure. I could not refuse, and he returned to his work. Three weeks later, he returned, praying us to again give him a bed in our service, and we have done so. He was this time positively ill; he had never had any new hæmoptysis, but during the first days of his return to work, he experienced, on the least effort, a fatigue hitherto unknown, and a painful oppression; then he was taken with accesses of palpitation, which made it impossible to work, and seeing these accidents persist, despite resting at home, he decided to re-enter the hospital.

The examination which we have gone over again, shows us that all the phenomena previously established in the second right intercostal space, have declared themselves a little more plainly, so that the pulsations are visible in a larger extent, so that to establish them, there is no need of resorting to the process of Greene,—they appeared at the first glance; the beats were a little more energetic under the hand, and the intermittent quivering had positively gained in force; the two clappings being the same as in the past.

In addition to this, a new symptom had been produced: this was a sharp pain at the precise point where the pulsations showed themselves; this pain, which existed at, no other part of the chest, was spontaneous, but was notably increased by pressure. The state of the lung was greatly modified as to the phenomena of auscultation; with reference to this, the superior lobe could be divided into two zones, the one peripheral, the other central. At the periphery, one could perceive in front, upon the side and in rear, large mucous râles; in the centre, the râles were entirely absent as hitherto; but the souffle gaining in power and volume, had very manifestly taken on the cavernous character. This modification of the stethoscopic signs was most clear, it struck every one who had examined the patient during his first stay in the hospital. According to the classical teachings of semiology, it was evident that the indurated lobe, lately compact and solid, was in process of softening, and that in the center, a cavity had been formed by the elimination of the product which had obstructed the pulmonary alveoli. But all this did not any the more clear up the question of the nature of this product, since there are caverns originating from hæmorrhage, as well as those tuberculous; and as every sign of cachexia was absent, as the patient only complained of his oppression, and of the palpitations and thoracic pain, we were no farther advanced than the first day, the same contradictory arguments still arose with all their power.

Ten or twelve days after his re-entrance into our service, the young man was, within fifteen hours, carried off by an attack of cholera. The anatomical specimens which I place before your eyes, permits you to follow step by step, my description.

The heart is intact, as is also the aorta in its intra-pericardiac tract. But at its emergence, this vessel presents forward in a point which corresponds to the right second intercostal space, a little ampullary bulging due to the projection of its anterior wall. This projection, otherwise regular, has as its effect an increase of the level of the arterial cylinder; and on this side and beyond the ampulla, you can see it a little more markedly,—the difference is, at least, a centimeter and a half. This dilatation is perfectly limited; you see very clearly that the artery is not enlarged throughout its whole circumference, the anterior wall is alone distended, and at one point; in starting forward, it has formed an ampulla of rounded contour, which detaches itself by its slight prominence from the ascending aortic cylinder: in a word it has the appearance of a partial dilatation. The aorta being maintained open by its posterior wall, and stripped of a large fibrinous clot which, commencing at the left ventricle, terminates in the bottom of the ampulla, to which it is only slightly adherent, it is easy to demonstrate, that this dilatation pertains to the class of true aneurisms, that is to say, that it is formed by all the arterial tunics; not only is there no rupture in the internal layers, but they are not rough, they present neither atheroma nor deposit of any kind,—the age of the patient permitted us to foresee that. On the other hand, on a level with the dilatation, the arterial wall is certainly thinner; you can appreciate this, in passing the vascular wall between your fingers, feeling it lengthwise and in its caliber; at the moment you have arrived at the ampulla, you can easily perceive that the interposed membranous layer suddenly diminishes in thickness. You perceive the same thing not less clearly, in placing the aorta between your eye and the light; the transparence is greater, without any doubt, at the level of the point dilated. We have there then, as the symptoms made us recognize the fact, an aortic aneurism at its beginning. The smallness of the ampulla explains to you the smallness of extent of the pulsatile focus observed during life, and the absence of every phenomenon of compression; in the meantime, the integrity of the arterial wall, and the almost spherical form of the diverticulum, very well explain the production of a double pulsation and a double bruit of percussion. As to the cause of this modification of the aortic cylinder, I can not seize it; one detail strikes me however, and I wish to point it out to you. Surrounding the diseased point, you can perceive a very rich injection of the external layers of the artery; the capillaries are dilated and engorged with blood, and this condition is the more striking inasmuch as it exists at no other point than that. This congestion is not modified by washing, any more than by pressure, and I can pretty certainly see the trace of a limited external aortitis, which modifying at one point the physical properties of the tissue, has diminished its normal resistance; yielding then to the pressure of the blood, the wall of the vessel has mechanically become dilated. It is of little importance what explanation you may give beyond this, the fact is there, and the anatomical controlling element ought to demonstrate to you, all the semiological value of the phenomena which we have observed together.

I now come to the lung. Here the autopsy shows me perfectly wrong. You see the superior lobe of the right lung, it has the weight of stone, it is resistant like a block of some compact and hard substance, but there is no hæmorrhage; it is a tuberculous infiltration to the maximum of confluence, which has thus transformed this part of the organ. For the rest, the other lung is perfectly sound, as are all the other organs, the general health of the individual, as I have repeated to you to weariness, has always been good, and under such conditions I regret my error, but of a truth, I could scarcely call it a fault.

One other surprise we have in reserve, and to this point I call all your attention; it is a capital fact in semiology. At the periphery of the pulmonary lobe tubercles show themselves at certain points in process of softening, and this explains, in a satisfactory manner, the mucous râles perceived since the second entrance of the patient into our wards; but in the interior of this mass, there where we expected to find an excavation, there was no trace of it; on the contrary, it is in the central parts that the tissue presents its greatest hardness and compactness; as to the bronchi, they are not at all dilated. So I have heard, and each of you could hear along with me for more than ten days, cavernous souffles, and the cavernous voice in the sub-clavian region, and now that we have the lobe of the lung under our eyes, and in our hands, we can observe it from all sides, we can turn it over in every sense, and we find it compact and solid; of a cavern, there is no vestige. Can we have been mistaken in our appreciation of the stethoscopic signs? As to that, I will deny it formally; whoever has auscultated the patient will deny it along with me. The souffle was of the cavernous type, the resonance of the voice had positively the same timbre, we can have been less mistaken in this case, inasmuch as we had perfectly established in the beginning, the tubular souffle and simple bronchophony. Now, the symptoms being certain, the absence of the cavern being none the less positive, the sole conclusion to be drawn from the fact is this: One can hear the souffle, and vocal resonance of cavernous pitch, in the absence of any cavern; the true gurgling is then the least deceptive sign of pulmonary excavations. This is not the first time, furthermore, that this striking discordance has been observed between the phenomena of auscultation and the lesions; I do not think that it has been hitherto seen in the induration of tuberculosis; but in pneumonia, in many cases, the voice and the cavernous souffles have been demonstrated, when the autopsy showed a little thereafter a simple phlegmasial induration, without any cavity: there is still the same contradiction in certain pleurisies, the effusion of which crowds and compresses the lung from base to summit, so as to condense the tissue, and to cup it, so to say, toward the superior part of the chest. Heretofore, in one of my notes to the translation of Graves' Clinical Lectures, I pointed out these phenomena which I propose to you to call pseudo-cavitary, and I have recalled the principal observations in demonstrating its existence in pneumonia and in pleurisy.

Our fact is not then isolated but it reveals to us one cause of error the more, in the diagnosis of pulmonary caverns; it is not alone pneumonia or pleurisy which exceptionally can produce stethoscopic cavitary phenomena in the absence of excavation, there is also massive tubercular induration of a lobe. The connection of these divers categories of exceptional facts shows that there is but a single point in common, to wit: the induration, or pulmonary condensation; there is, then, this physical condition, which is the cause of the deceptive signs observed. But what is the peculiarity by which the induration and condensation of the lung which ordinarily reveal themselves by a bronchial souffle and simple bronchophony, produce the cavernous souffle and voice? This question has scarcely been solved. The fact which we have observed tends to show that for this it is necessary that the induration should occupy an entire lobe, and that the solidification should be complete so that the bronchi of large caliber may be open in the condensed mass.

However this may be, you see that the diagnosis of pulmonary caverns is, to-day, far from offering the mathematical certainty which the discovery of Lænnec led him first to assign to it, since, of the three phenomena upon which it was based, two have lost their pathognomonic character. This is not one of the least useful lessons of clinical observation which has passed before our eyes.

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

WARRENTON, VA., Sept. 29, 1870.

My dear sir: I sent you, last spring, a paper on the use of hydrate of chloral, my object being at that time to call the attention of country practitioners to a remedy of great value that had not at that time been generally introduced into practice in this country. In that paper I stated that I had not observed any fact, during the use of the medicine, calculated to support the theory that its peculiar action was due to the slow formation of chloroform in the system, produced by the decomposition of the hydrate in the presence of the alkali of the blood, but there were many striking facts of the opposite tendency. I have, since that time, seen many publications from eminent sources in support of views contrary to my own. I beg leave, therefore, to ask your attention to the following facts: The observations of Dr. Snow seem to establish that 24 minims of chloroform actually circulating in the mass of the blood is the average quantity necessary to produce complete anæsthesia. Practitioners will generally agree with me in the impression that that quantity is rather too small than too large. But an inspection of the formulæ will show that the decomposition of 15 grs. of hydrate of chloral will produce only about 8 grs. of chloroform, a quantity equal to less than 6 minims, or one-fourth of the quantity of chloroform, actually necessary to produce sleep when circulating in the blood.

Now in twenty minutes after taking 15 grs. of the hydrate of chloral, I have repeatedly seen sleep produced. But at the rate of decomposition which takes place in solutions outside of the body, I have calculated that in that length of time, less than one minim of chloroform will be introduced into the circulating mass.

Once more, the sleep or stupor produced by chloroform passes off in about ten minutes. So that in a sleep of six hours, produced very commonly by 15 grs. of hydrate of chloral, we must calculate that 24 minims of chloroform must be introduced every ten minutes, or 184 minims every hour, or 1000 minims in the six hours, a pretty continuous stream which can not be obtained from the chloral, unless that medicine be endowed with the indefinite, self-multiplying powers of the yeast plant.

These facts seem to me to be conclusive of the question. I will not, therefore, at this time weary your patience by instituting a comparison between the effects of the internal administration of chloroform and hydrate of chloral, and by calling your attention to many other minor facts calculated to support my views, but I am willing to discuss this question with any gentleman who will take up the other side.

With best wishes for your great and permanent success, I am yours, respectfully and truly, M. G. Elzey, M. D.

Louisville, Ky., Sept. 27, 1870.

Dr. Gaillard: I ask you to give a place in your journal, for the following report of a case, which I trust will serve to keep in mind, among practitioners, the "Ready Method of Marshall Hall."

In a case of labor, which terminated yesterday, the child's head, in the third position of Baudalocque, had escaped from the mouth of the uterus and become fixed in the pelvic straits from one o'clock in the morning until nine o'clock the next day without progress, notwithstanding there was the most violent uterine contractions. At the last named hour I applied the forceps and delivered without difficulty. The child was of the size and appearance of one at full term, but pale, limber and seemed to be dead. I at once cleared the mouth of mucus, slapped the skin with the hand, dashed cold water in the face and gave it several turns of the postural movements of the "Ready Method" of Marshall Hall, without producing any signs of life. Some uterine hæmorrhage coming on I was obliged to turn my attention to the mother. In a few moments the placenta was delivered and the hæmorrhage arrested. The umbilical cord was then tied, the child detached, and removed to a blanket on the floor. I then repeated the slapping, the dashing of cold water in the face, and the postural movements for some time, certainly for ten minutes, without awakening any signs of life, except that the skin assumed a purplish hue. Then I immersed the child for a moment in warm water and repeated the means of artificial respiration, as well as those to excite respiration. Altogether the child was immersed three times, each followed by the other procedures, and finally I discovered that the lips, surface and extremities had a ruddy appearance. I then removed the child to a verandah in order to expose it to the fresh air, and there continued means to imitate and excite respiration, and finally excited a gasp which occurred simultaneously with the removal of the hand from the spine and the rotation on the side in the method. By continuing the movements, the gasps became more and more distinct, and in about five minutes from the first one, the respirations became self-sustaining. Altogether it must have been more than half an hour after birth before any signs of the respiratory power became evident. To-day, twenty-four hours after delivery, the child seems well and vigorous. Very truly yours,

B. W. Wible, M. D.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

Art. I.—A Treatise on the Theory and Practice of Obstetrics. By W. H. Byford, M. D., Chicago, Ill. New York: W. Wood & Co. 1870.

Prof. Byford is so well known to the mass of professional readers, that nothing is required as an introductory of him. It is well known that he has been recognized as an authority in connection with his individual specialty for many years. The volume here noticed has one great merit, conciseness and clearness of expression. That portion of the work wherein the mechanical details of the obstetric art are considered, contains all of the information to be gained in many works of more pretentious appearance, and will be always consulted by the busy physician or equally busy student with advantage. There is nothing in the work manifesting any peculiar views of the author in regard to pathology and practice: it is particularly orthodox. The work consists of 400 pages, and costing not more than $5.00, will, no doubt, become generally known and appropriately valued. E. S. G.

Art. II.—Medical Diagnosis with Special Reference to Practical Medicine. By J. M. Da Costa, M. D. Philadelphia: J. B. Lippincott & Co. 1870.

This is the third edition of this well known work. There are few medical libraries in which it has not long been a familiar volume. Indeed so much is this a fact, that the work is too well known to justify the use of space for description. There are no material alterations or additions since the publication of the second edition.

Though this volume and others of a kindred character are so well known to the profession and so popular with its members, it may be doubted whether the whole basis upon which it (and others like it) rests is not essentially wrong, injurious and unsafe. Correct diagnosis in disease can only be made by a correct knowledge of pathology and those branches of medical science in close connection with it. Any other means of reliance encourages superficial study, leads the practitioner into error, and subjects his patient to danger. When, in addition to these self-evident facts, it is recollected that in no two instances are the manifestations of any disease similar, and that, in the presence of pathological discrepancies, accurate pathological knowledge can be the only possible guide or reliance of the physician, it surely requires no additional arguments to show that the use of this work and all similar manuals becomes unsafe and prejudicial, both to the patient and physician. Certain uniform or fixed conditions are assumed to exist in diseases, giving them a uniform livery, when in fact in every disease there is as much individuality as there is among those who are the unfortunate representatives of disease. This being the case, the assumption that uniform morbid conditions exist in each disease constituting the basis of diagnosis and differential diagnosis is not only incorrect but prejudicial. The same objections, it may be said, can be urged against the symptomatology of all medical works; but the reply is simple: in these works there is given to the student more than symptomatology: he has, with this, the pathology, etiology, history, etc., of the disease, which separately or combined serve to guard him from error and confusion. That a work on diagnosis renders the physician's labors at times more easy is unquestioned, but in this very absence of the mental investigation and analysis lies the danger to the patient and physician. There is no simple road to diagnostic knowledge any more than there is to learning of any description. As in the last one must master the elements which in time make up the grand aggregate of wisdom, so there can be no success or safety in diagnosis unless those elements which constitute its basis be previously and consecutively the subject of accurate and constant study. E. S. G.

MISCELLANEOUS.

"Non omnes eadem mirantur amantque."

Faraday. By Samuel Henry Dickson, M. D., LL. D., Professor of the Theory and Practice of Physic in the Jefferson Medical College, Philadelphia.

Among the most remarkable men of our time was the distinguished physicist, chemist, and experimental philosopher, Michael Faraday. Born in London, the son of a poor blacksmith; reduced in his early childhood to live for a short time upon public charity; a newsboy, and then an errand-boy; apprenticed to a bookbinder; entirely self educated; how strongly does his career illustrate Galton's theory of the "irrepressible elasticity of natural powers combined with zeal and capacity for hard labor!"

As we read his biography, we are constantly reminded of our own Franklin. Like him, we see the young cockney incumbered with impediments and difficulties, and struggling successfully to overcome them all. We trace him in his course of earnest effort and inquiry: he becomes an ingenious experimenter, a discoverer; then a teacher as well as learner; a lecturer; soon recognized among the scientific men of Europe as a pioneer; received as a promising *confrere*, if not admitted "primus inter pares." On his list of personal friends and correspondents we find the names of De la Rive and Dumas, Herschel and Humboldt; he is loaded with appointments and fellowships of learned societies everywhere; the French emperor writes him autograph letters, and names him a commander of the Legion of Honor; and, at last, after the manner of the prophet of all ages and nations, his own country enrolls him, with well-expressed reluctance on his part, among her pensioners, and doles out to him such niggardly acknowledgment of his eminent merit as England sometimes permits herself to be shamed into offering.

Tyndall has sketched him for us "as a discoverer;" and, indeed, he is almost without a rival in this field, whether we consider the number or the value of the additions he has made to practical knowledge; but, to our mind, this is not Faraday's specialty, his most striking peculiarity. Great as he was in his successes, he was far greater in his failures. He passes his whole life in aiming at impossibilities, while he achieves all that is possible to him, and far more than would have been possible to any one else. He was "of imagination all compact;" science, with him, was poetry. Like the true poet, a creator and a dreamer, he tells us, of himself, that he was "as ready to believe in the Arabian Nights' Entertainments as in any commonplace history."

Early in his progress he is caught by the fancies of the old alchemists, and speaks in one of his lectures of realizing "the once absurd notion of the transmutation of the elements, and obtaining the bases of the metals." Later, he anticipates Grove, in announcing the doctrine of the correlation of forces, but soon dashes on into the assertion of their absolute identity. Having satisfied himself that magnetism and ordinary electricity are one, he proceeds quickly to incorporate with them galvanism and all other forms of animal electricity, including that of the gymnotus, and contends that they are all mere modifications of heat and light, and chemical action. Excited at his task, he sets himself to complete his theory or hypothesis by establishing the identity or similar correlation of electricity with gravitation. How constantly, and yet how vainly, he wrought at this labor of love, his writings everywhere show. The last paper he presents to the Royal Institution records the same failure that he had confessed repeatedly before, and is withheld from publication because it is nothing but a statement of suggestions, ingenious experiments, and negative results.

He had so often verified his own predictions or conjectures in progressive science, that he had created in the minds of his friends a confidence in his views which his modesty did not permit him to indulge in himself. Thus, we find Mrs. Somerville, in one of her letters to him, contemplating as assuredly at hand what he and they were so eagerly looking for—"the discovery of that one comprehensive power of which gravity and all the correlative and convertible forces are but parts." The veil is not yet lifted which conceals this mysterious fusion.

But his restless and fertile intellect was ever pullulating, putting forth feelers, in a thousand different directions. Curiosity and wonder absorbed him from the cradle to the grave. He is always eager to know—to attain truth—to arrive at facts. "How wonderful a thing is nitrogen!" he exclaims; and in another place, "Oxygen is the most wonderful of all things."

He theorizes, proposes hypotheses, and speculates on almost every subject of human thought. He loses himself, at last, in speculation. He arrives by a different route at the same conclusion with Bishop Berkeley, and denies, or, to say the least, refuses to admit, the existence of matter. "What do we know of it but by its manifestations as forces?" he asks, triumphantly. He repudiates the atomic theory of Dalton, and recognizes only "centers of force" and "lines of force." He does not seem to see that, if he had carried out his double view, and succeeded as well in establishing the identity and unity of forces as in abolishing matter, he would have made for us a very simple universe, consisting of but a single force expanded throughout space, with nothing but itself to act upon.

We have before us his "Life," compiled by Dr. Bence Jones. It is contained in two cumbrous volumes, in which there is an immense superfluity of material thrown together in such promiscuous order, or disorder, that neither the general nor the scientific reader can get through them without weariness and dissatisfaction. Yet there is in the history of such a man something to interest every thoughtful person; and all varieties of readers may pick out for themselves some pleasant plums from this great pudding.

One word of serious censure must find utterance promptly. Sir Humphrey Davy, the finest patron of Faraday, and Lady Davy, are dead—long ago; the former leaving a lofty name to his country. Between them and their grateful *protege* there arose misunderstandings and jealousies, obliterated and forgotten, let us hope, during their lives, and buried in the graves of all. It was both useless and cruel to revive and give permanence to the trumpery ill-humor and gossip arising out of transient and unavoidable circumstances. It was ungallant, too, to hint at the charming Lady Davy as especially to blame. But there is little blame to attach to anybody. Faraday, Sir Humphrey's chemical assistant, an appointment sought for and thankfully accepted by him, did occasionally, although under mild protest, act as his valet, or body-servant. While on the Continent, the "chemical assistant" became known to some foreign *savants* as a most ingenious experimental inquirer and discoverer, and was esteemed worthy, on one occasion, of an invitation to a dinner, at which Sir Humphrey and Lady Davy were also expected guests. They took offense at this, and expressed the feeling. If they thus failed to exhibit the elevated magnanimity which would have done them honor, we may regret, but can not severely find fault with them. "Put Yourself in His Place," is the title and the refrain of Reade's last and best work. If we would put ourselves in the place of Sir Humphrey and his lady, we might indeed congratulate ourselves on the equity and courtesy we should display in consenting to meet our domestic on equal terms—*if* we could bring ourselves to *consent* to it. The repugnance they showed was, to an English gentleman and lady, natural and inevitable; we do not hesitate to say, pardonable.

We would not, however, extend the same lenity to the conduct of Sir Humphrey at a later date, when he opposed Faraday's election as a member of the Academy, an opposition soon apparently repented of, and withdrawn. Yet, in the ballot one black ball was cast, which can hardly have been imputed to any other than the quondam patron and now professed friend of the candidate. *Tantæne animis celestibus iræ?*

He tells us of himself, that, while apprentice, he was accustomed to read as much as time permitted of the books put in his hands to bind, and that the first spur to his love of natural science was given by the perusal of Mrs. Marcet's work. The old lady was hugely delighted at Faraday's statement to her of this fact, when she had passed her eightieth year; and well she might have been.

What different feelings must have exercised Sir Joseph Banks, to whom was addressed a letter written by the poor youth, appealing for sympathy and aid in his eager anxiety to rise into a higher intellectual life! The letter received no reply nor notice.

Faraday took heart, however, after a time, and made a second application, and with better success, to Davy, who, being struck with the contents of the paper addressed to him, called on the writer, and took him at once to assist him in his laboratory. He carried him with him, as we have stated, to the Continent, and afterward procured him the situation of chemical assistant in the Royal Institution, with the privilege of residing there in apartments which he retained for many years, even after he was married.

If we ask what sort of character was Faraday in social and private life, his niece informs us in some well-written memoranda. She describes him as extremely amiable, though somewhat irritable in temper, and with certain idiosyncrasies of excitement. He liked games of all sorts; played all of them well, and was very dexterous with his hands. He amused himself especially with draughts, bagatelle, and papyro-plasty, and was fond of Punch and Judy, acrobats and tumblers, giants and dwarfs. He was always much delighted with the monkeys in the Zoological Gardens, and would laugh, as he watched them, till the tears ran down his cheeks. But his moods were variable. At times he would exhibit himself as another Gradgrind in his exclusive devotion to and demand for "facts," and again he would let his fancy or imagination run riot in the wildest vagaries.

His capacity for *wondering* we have already remarked upon; it was indeed endless and unlimited; as vast in his ripe old age as in his earliest youth, reminding us often, indeed, of Cowper's "Katterfelto, with his hair on end at his own wonders, wondering for his bread." Take an example. Electricity was his specialty—the hobby which he rides so hard that it seems indeed under him rather the hippogriff of some thaumaturgist or magician; the familiar topic of perpetual experiment and discourse. Yet he regards it with awe to the very last. "We know nothing," he exclaims, querulously, "we know nothing of the intimate nature of it, whether matter or force, or vibration, or what! Of theories there are several, and two principal ones, both assuming it to have an existence independent of ordinary matter." Then he goes on to throw *us* into profound astonishment: "I am almost afraid," he tells us, "to give an idea of the amount of electrical force involved in the decomposition of a single grain of water, which may be estimated at 800,000 discharges of my large Leyden battery. This, if concentrated in one discharge, would be equal to a very great flash of lightning; while the chemical action of a *single grain of water on four grains of zinc* would yield electricity equal in quantity to a *powerful thunder-storm!*"

He somewhere gives a pretty account of the manner in which a tree is struck and destroyed by the lightning which it collects from the atmosphere on its leaves and small branches, running down along them to the trunk, and gathering as it goes, until it explodes and tears everything to pieces. But why should it explode? What is explosion, as the word is applied here? What explodes? Whence the noise, the crash which we call thunder? The explosion of gunpowder, etc., we understand, as the impulse on the air by the expansion, sudden and violent, of solids or fluids into the gaseous condition; but the awful voice of the storm-cloud does not suggest or admit of such explanation.

Of silica, a very quiet sort of body, though occasionally troublesome in the form of sand, he declares: "It startles us by the strange and unaccountable places in which we find it." And again: "Nitrogen is a strange body; it encourages every sort of guess about its nature, and will satisfy none. As yet it escapes me."

But "oxygen is of all bodies the most wonderful. It is that substance by which we live, and move and have our being." "Life," he tells us elsewhere, "is only a chemical action prolonged. * * * Oxygen is a magnetic body, and highly magnetic, yet it loses all such force in its compounds." He computes that it constitutes half the weight of existing things.

He is always mystified when he approaches the topic of gravitation. Of force he says: "What I mean by the word is, the source or sources of all possible actions of the particles or materials of the universe. It is impossible to create force. We may employ, invoke, hide it; but can neither create nor destroy it. Assuming, then, the conservation of force to be a principle in physics as large and sure as the indestructibility of matter, or the invariability of gravity, no hypothesis should be admitted, nor any assertion of a fact credited, that denies the principle. Now, the received idea of gravity seems to me to ignore entirely this principle of the conservation of force, and, by the terms of its definition —'varying inversely as the square of the distance'—to be in direct opposition to it."

He denies the truth of the received axiom, that "bodies do not act where they are not, *corpora non agunt ubi non sunt*. * * * The cases of action at a distance are becoming daily more and more important. Sound, light, electricity, magnetism, gravitation, present them as a series. The nature of sound, and its dependence on a medium, we think we understand. The nature of light, as dependent on a medium, is now very largely accepted. The presence of a medium in the phenomena of electricity and magnetism becomes more and more probable daily. Then what is there about gravity that should exclude it from consideration also?"

The vagueness of his language when treating of these topics shows forcibly his intense anxiety to disentangle this intricate knot, as well as his appreciation of the difficulty.

"Like Boscovitch," says Tyndall, "he abolishes the atom, and puts in its place 'a center of force.' Force seemed to him *an entity*, dwelling along the line in which it is exerted. The force of gravity acts in lines across space; the vibrations of light and radiant heat consist in the *tremors* of these lines of force." "My view of the constitution of matter," he admits, "would seem to involve the conclusion that matter fills all space, or at least, all space to which gravitation extends; for gravitation is a property of matter dependent on a certain force, and *it is this force which constitutes the matter*. Matter is not merely mutually penetrable, but each atom extends, so to say, throughout the whole solar system, yet always retaining its own center of force."

Verily, these are dark utterances, and we can not be surprised that in such bewildering speculations his brain became, in progress of time, shaken and enfeebled, and his faculties impaired. He was especially annoyed by consciousness of failing memory, which disturbed and harassed him long before his friends were aware of it.

In one of his later lectures he announces it as his "final brooding impression that particles are only centers of force; that the force, or forces, constitute the matter; that, therefore, there is no space between the particles distinct from the particles of matter; that they touch each other just as much in gases as in liquids or solids, and that they are mutually penetrable to their very centers, probably."

We confess ourselves at a loss to comprehend what it is here that touches and penetrates mutually—particles, centers, or lines of force.

After the delivery of this lecture, two letters were addressed to him, which will be found in vol. ii, pp. 180–182. Dr. Mayo comments on the view stated above, to the effect that "it resolves all matter into a metaphysical abstraction, a mathematical point with an atmosphere of force grouped around it. Indeed, your mathematical point is either a simple negation, as having neither magnitude nor parts, or is itself a material atom after all." Dr. Green, while avowing his assent to the doctrines taught by the lecturer, goes on to specify "a difficulty in adapting Boscovitch's theory, that 'matter *fills* space by virtue of its forces, but does not *occupy* it.' The ideal points which are the foci of forces, attractive and repulsive, do not present any intelligible conditions for the origination and renewal of the forces.' We do not find anywhere recorded any reply to or notice of these suggested objections.

There was another fixed opinion which Faraday labored very hard to establish, but which he entirely failed to prove by his numerous experiments. He believed that all substances existed in, and might be made to assume, the three forms, solid, fluid, and gaseous. We hardly need say that he found very many indomitably obstinate; nitrogen, especially, "always escaped him."

We have quoted his expression, that "life is only a chemical act prolonged." This admitted readily of misrepresentation, and on one occasion, a popular lecturer, in London, ascribed to him the belief in spontaneous or equivocal generation, the inorganic origin of living beings. He was not slow in repudiating the charge indignantly, and sternly rebuked the writer who had attempted to fix on him the stigma of holding opinions "inconsistent with true science or sound religious doctrine." And when, by no less respectable an author than Miss Harriet Martineau, he was numbered among those who had become convinced of the production of a silicious insect or worm, the *Acarus Crossii*, by electricity, he wrote and published a protest against the statement, as utterly unfounded.

In the year 1853, says his biographer, when table-turning was rampant in England, and the alleged prodigies of spiritualism were attributed by some to the old satanic origin revived, and by others to some new force of nature, Faraday was urged, from many quarters, to examine into and pronounce upon it. He acceded to the demand, and gave emphatic utterance to the contemptuous disgust with which his observations and inquiries had inspired him. "The wonders of human credulity and belief, as exhibited in the evidence adduced, so astounded him that he burst forth in a bitter cry for improved education of the masses of the people."

In a vehement letter to the *Times*, he says: "I declare that, taking the average of many minds that have recently come before me (apart from that spirit which God has placed in each), and accepting for a moment that average as a standard, I should far prefer the obedience, affections, and instincts of a dog before it. I have been shocked at the flood of impious and irrational matter which has been rolled before me."

After this, he refused repeated invitations to meet Home, the great miracle-worker of the day, and to attend the exhibitions of the Davenports, and others. He was weary and sick, he said, of the whole affair. But we can not help regretting that, on one exceptional occasion, when he had consented, at the earnest request of Sir Emerson Tennent, to be present at one of Home's seances, some occurrence prevented their coming together. Would the modern Cagliostro have triumphed or met with a defeat? Who can say? It would have been a severer scrutiny than any to which he has yet been subjected.

Faraday's religious views were somewhat peculiar. He professed that modification of orthodox Christianity known as "Sandemanism," from the name of its principal teacher. It was characteristic of him that he suddenly and openly joined the Church, in a formal manner, without having mentioned his purpose even to his wife. She was surprised and perhaps chagrined at this reticence; but when she spoke of it, he said simply, that "it was a matter exclusively between God and his own soul."

In one of his letters we meet with what seems to us a singular expression, referring to "the Christian thought of Him who died, *was judged*, and rose again," etc.

To a correspondent he writes: "There is no philosophy in my religion. Our hope is founded on the faith that is in Christ. The Christian religion is a revelation; the natural man can not know it. Religious truth, the truth of that future, can not be brought to man's knowledge by any exertion of his mental powers, however exalted they may be; it is made known to him by other teaching than his own, and is received through simple belief of the testimony given. Let no one suppose that the self-education I commend, in respect to the things of this life, extends to any consideration of the hope set before us, as if man could by reasoning find out God. I claim an absolute distinction between a religious and ordinary belief. If I am reproached for weakness in refusing to apply those mental operations which I think good in high things to the very highest, I am content to bear the reproach."

A curious incident, occurring not long before his death, deserves mention here. His assistant at the Royal Institution, Mr. Anderson, died, much respected, in January, 1866. Sir I. South "wished some monument to be put up to his memory, and wrote to Faraday about it. The reply runs thus: 'I use my dear L.'s hand as better than my own.

She has already told you, I understand, how averse I am to meddling with sepulchral honors in any case. *I shall mention your good will to Anderson'* (here he took the pen himself, because his niece objected to the words, Anderson being dead), 'but I must tell them what are my feelings,'" etc., soon yielding the pen again to his amanuensis.

He sank away gradually and slowly, worn out with mental labor and physical fatigue. Bodily weakness, with a fading memory, was almost the only token of his decay, and he lived to a ripe old age, beyond the ordinary allotment of threescore-and-ten. The poor newsboy had not lived in vain. He had attained, and richly merited, a position among the greatest and loftiest men of his day. He had been one of the most useful. His discoveries had changed for the better conditions of general knowledge. Not to speak of any other department, his application of the relations of electricity opened new views in physics and in chemistry, illuminated some dark points in physiology, and aided the efforts of pathology and therapeutics; made Atlantic cables possible, and offered a far better light to the storm-tossed sailor than has ever yet been invented.

After all this, it is amusing to notice the coyness with which he receives the tardy acknowledgments and rewards tendered him by his own country, to whose glory he had so largely contributed by the advancement of her scientific reputation, whose light-houses he had so greatly improved by his labors, and whose position, social, hygienic and economical, he had done so much to elevate. On one occasion he says, with becoming pride, "I have already received, from foreign governments, numerous honors far higher than any which my own government *can* confer upon me." Yet he at last yielded gracefully, accepting from the minister a moderate pension, and from the queen a modest residence at Hampton Court, his final rest, and the place where he died.—*Journal of Psychological Medicine.*

Treatment of Chronic Dysentery, with large doses of Powdered Ipecac.—Subjoined are brief histories of three cases of chronic dysentery, treated some years ago, when on the Pacific coast, by W. E. Whitehead, M. D., assistant surgeon U. S. army.

Case 1.—N. M., white, single, aged thirty-six years, sailor. Came under my observation and treatment in April, 1868; much reduced in flesh and strength; loss of appetite; frequent mucous and bloody stools, often as many as twenty-five a day. Three years previously, while in Australia in the mines, had a very severe attack of dysentery, with fever; was then sick for nearly three months; when sufficiently strong, he left the mines and went to sea, but did not fully recover his flesh and strength, and for three years had daily from five to twenty-five small, watery, bloody, and mucous discharges from the bowels. Upon examination, I found he had soreness in the left iliac region; no piles or ulceration about the anus; appetite capricious; tongue coated and slimy; skin dry; urine scanty and highly colored.

Treatment.—To take a warm salt-water bath twice a week; to eat soups and farinaceous food, with milk and weak green tea; no spirits or fermented liquor; to wear flannel at all times; to sleep in a warm, dry, and well ventilated place. To take ℞. pulv. ipecac, grs. xv, three times a day.

At the end of one week his condition was much improved; his stomach now tolerated the large doses of ipecac; the discharges from the bowels were less frequent and more solid; appetite, spirits, and general condition, much improved. He said that he felt more like doing his duty (general hand on board a small Government schooner) than he had done for several years. Continue the powdered ipecac in twelve grain doses three times a day; no change made in the general treatment. At the end of ten days more he was so much improved that he did not think it necessary to take any more of the powders; but I concluded to continue them in doses of ten grains twice a day; to take one as soon as he arose in the morning, and one just before retiring to bed at night. This was continued for two weeks, with advice to begin the use of solid food. At the end of this time, or about the fifth week of the treatment, N. M. was much improved in strength and flesh, good appetite, digestion good, from two or three healthy alvine discharges in twenty-four hours, secretions normal and healthy. Cured.

CASE 2.—S. R., white, single, aged twenty-eight years, sailor in the revenue service. Was sent to me for treatment by the captain of the revenue cutter, Joe Lane, in June, 1868. Four years ago had fever and dysentery while in China; had then been unfit for duty for three weeks, when he went to sea, and his general condition improved,got rid of the fever, but has had dysentery discharges continuously since the first attack—an average of five discharges daily, frequently bloody and slimy.

Physical examination revealed decided tenderness over the course of the large intestine, and several ulcers just within the margin of the anus. Appetite fair, tongue red on the edges, thickly furred in the middle; some loss of flesh, and a general feeling of languor, with loss of strength and vigor; the skin lacked its natural elasticity; urine normal.

Treatment.—To take a hot salt-water bath three nights a week, just before going to bed; to eat such nourishing food as best agreed with him; to eschew all kinds of intoxicating liquors; to wear flannel next his skin; to sleep in a well ventilated, dry, and warm room; to take fifteen grains of powdered ipecac morning and evening, on an empty stomach. At the end of eight days he was much improved; discharges from the bowels more consistent and much less frequent; general condition much better. Continue the ipecac in ten grain doses twice a day for a week. Reported at the end of the week so much improved that he desired to be returned to duty, as his ship was short-handed. To take every night, at bed time for two weeks, eight grains of powdered ipecac. Was seen again in three weeks, entirely well, and about going to sea on a cruise. Cured.

Case 3.—T. R., white, single, aged forty years, sailor in the merchant service. First seen in August, 1868. Two years ago he had an attack of dysentery in Chile; was then very sick for one month, when he left for the north, and had not been able to do any heavy work since; had been compelled to abandon the sea. He presented a very unhealthy appearance; skin of a bad color, lax and bloated; great tenderness on pressure over the entire abdomen; no piles or ulceration about the anus; urine highly colored and scanty; appetite capricious, strong desire to eat whatever disagreed with him; thirst considerable; tongue red and dry most of the time; strength much reduced; flesh soft and flabby.

Treatment.—To take a sea bath daily during summer, as had been his habit; diet to be light and nourishing; to drink two glasses of grog a day; to wear flannel next the skin; to sleep in a dry and warm bed. To take eight grains of powdered ipecac three times a day for one week; then, twice a day for one week; and then, once a day (at bed time) for another week. Reported at the end of the third week very much improved in general health; ordered to stop taking the powders, and take ten drops of the muriated tincture of iron, morning and night, in a wine-glassful of water. When seen again, in three months, was well, and had shipped for a voyage to sea. Cured.—*Pacific Med. and Surg. Journal.*

Patent Instruments and the Medical Press.—A gentleman who has evidently been rendered monomaniacal by the distracting study of the Code of Ethics and the discussions thereon annually held, writes to discontinue his subscription to the *Richmond and Louisville Medical Journal*, for the sole reason that that periodical—of which he otherwise entertains a high opinion—published a letter, over the signature of an eminent medical man, expressing a favorable opinion of Babcock's uterine supporter; which appliance, it appears, is covered by a patent. "Heartily approving," as this sensitive person does, "both the principle and the policy of discountenancing patent medicines and patent instruments," he feels that he would "do wrong to aid in supporting a journal that indorses either in its columns."

Apropos of this remarkable missive, the editor makes some sensible comments on the principle of patents in general, and on the frequent use and commendation of patented articles by the medical profession abroad, instancing as examples Dieulafoy's *Aspirateur* and "Liebig's Patent Concentrated Milk Diet." He might have added Liebreich's Chloral Hydrate and a score of foreign surgical appliances. Perhaps, however, the hyperæsthetic censor in question spurns in his practice all such iniquitous devices, and would rather use less efficacious unpatented things, or even let his patients die than lend his countenance to a system which he so strongly disapproves. But with the best intentions he will find it difficult to escape the dreaded and all-pervading patent. The steel of which his scalpel is made is prepared by a patent process; the silk or wire with which he stitches a wound is twisted or drawn by a patented method; his smoothly-spread adhesive plaster, and the lint wherewith he completes a dressing, are patent articles; the sinapisms which he orders are made of "patent mustard;" the jars in which he keeps his calomel and jalap, and the bottle that holds his "Infus. Sennæ Co.," are patent wares; his pills are rolled in a patent machine; and his patients are buried in patent coffins. Seriously speaking, simple common sense and our duty to our patients equally teach us that the first and only question to be asked with regard to any appliance for the relief of human suffering should be, not "Is it patented?" but only, "Is it useful?" and if this be answered in the affirmative, he who subordinates his patients' welfare to his own private prejudices, is deserving of infinitely severer censure than even the strictest ethicists could mete to the patentee.

Chloroform in the Treatment of Biliary Calculi. By John Barclay, M. D., Physician to the Infirmary, Leicester.—Seeing some reference in a cotemporary periodical to the proposed use of chloral as a solvent of biliary calculi, I crave space to state that I have met with very great success from the internal administration of chloroform in that disease.

I first used it in 1861, in the case of a clergyman, aged 58. He had suffered for twenty-three years from gall-stones; the peculiar pain, jaundice, with subsequent discharge, by stool, of the calculi, coming on so suddenly and without warning, as seriously and frequently to interfere with his duties. Just then, writing on alcohol, I had been studying the experiments of Lallemand and others on the existence of alcohol unchanged in the blood. Knowing that ethers are solvents of cholesterine, I ventured, on his third attack in that year, to prescribe chloroform in doses of two or three drops, three or four times a day, on the chance of its reaching the calculi through the blood. To his surprise and my gratification, pain, tenderness, distension and jaundice disappeared together, and in the eight years since elapsed, he has never had another attack. He keeps a bottle of "chloric ether" by him for occasional use. I have found it to give invariable and permanent relief in many instances since.

The theory of thus dissolving the calculi *in situ*, followed by the disappearance of the symptoms, leads to a deduction that may be legitimate, that relief was obtained by their being so dissolved.—*British Medical Journal.*

A New Vesicant.—In a recent number of the *Journal de Chimie Medicale*, M. Delpech calls attention to the defects of the ordinary preparations of cantharides; the proportion of the active agent or cantharidin, varying, the presence of fatty or oily substances sometimes causing the absorption of a dangerous poison, and the rosin or turpentine employed in the composition of the plaster being an unnecessary irritant. In place of this he recommends the cantharidinate of potash, which is of a very staple composition, has no odor and possesses a vesicant action in a high degree. He recommends as the best formula for the plaster:—Gelatin, 2.09 parts; water, 10 parts; alcohol, 10 parts; cantharidinate of potash, 0.20 parts; glycerine, 9.5 parts. The mass should be equally spread on thin gutta percha, a definite quantity being present in each square inch.—*Lancet.*

The Value of American Hemp.—Dr. H. C. Wood, Jr., has written an essay which he read before the Amer. Phil. Society, in which he records some experiments with an article of hemp grown in Kentucky. He took an alcoholic extract made from the dried leaves, swallowing at a dose nearly all the product of an ounce and a half of the leaves, with the effect of profound hemp intoxication. It proved to be toxic in its power, although he recovered himself in a day or two. He had all the exuberant hilarity usually experienced from the hemp, followed by a feeling of fear of impending death; this took so deep a hold on him that it was impossible to shake it off.

Other trials he has made with it convince him that it has more power than that brought from India, on one occasion four times the dose of the latter failing to produce the effect of the Kentucky specimen.

He has his extract made from a tincture, removing certain inert matters by an alkali; he intimates the hope that in the present revision of the U. S. Pharmacopœia the *ex cannibis purifactum* may be replaced by a preparation to be called *Resena cannibis*, and to be made by precipitating the concentrated tincture by water rendered strongly alkaline by soda of potash.

The native plant if used will always be more reliable than the imported, from the certainty of freshness, while the cost of it is hardly anything.—*Chicago Medical Examiner.*

From an Introductory Lecture by Mr. Berkeley Hill at University College, reported in the *British Medical Journal*, we extract the following description of the surgical system in the German army:

In the Prussian service, each army-corps of 30,000 men is considered a complete army, and is supplied with equipments of every kind to enable it to act independently, if advisable. There each army-corps has its medical staff of twenty head-surgeons, with a proper proportion of assistants, dressers, carriers for the wounded (*Krankentræger*), drivers, horses, litters, stores, wagons, some to convey the wounded, and others to convey surgical stores, water, etc., on going into action. Certain of the surgeons, with the sick-bearers, litters and wagons, are detailed to follow the *corps d'armee* closely; the remainder post themselves in the neighborhood, to form the field-hospitals. To these, the surgeons of the detachment with the forces engaged in action dispatch the wounded as fast as they are gathered by the sick-carriers from the field of battle. The wounded receive attention to their most urgent wants without delay. Each soldier carries on his person a bandage and a piece of lint, which the sick-bearers are taught to apply, as well as to put in force means of stopping loss of blood, should that be necessary, before the wounded man is raised from the ground. The sick-bearers are likewise instructed in the best way of carrying the man, according to the nature of his wound. With these precautions, the wounded are taken to the surgeon, who is close to the scene of action. He examines the wound; applies splints or what dressing is necessary to enable the man to reach the field-hospital; and inscribes on a slip of paper provided for that purpose the nature of the injury and what has been done to relieve it. Thus, when the man reaches hospital, needless examinations are saved. All these officials are, in time of peace, carefully drilled in their duties, and have as their sole charge the collection and attendance of the wounded in battle, or the sick who fall out on the march. Thus the combatants not only fight with better heart, knowing that, if disabled, a body of skilled bearers will come at once to their rescue, but they have no excuse to leave their ranks at a critical moment of the fight to carry a wounded comrad to the rear.

The wounded or sick being safely disposed of in the field-hospital, the next step is to restore them to such a condition that they can be dispatched to the permanent hospitals in Germany which are ready to receive them. This is always most advisable, because the field-hospitals are rarely, if ever, supplied with the best means of repairing injuries; nor are they salubrious abodes. It is also necessary to clear out these primary hospitals, to make room for fresh cases constantly coming from the front. Indeed, the heavy slaughter of the recent battles was far greater than the field-hospitals could meet; and thus the neighborhoods of the battles have been crowded with wounded and dying, in a condition, as far as they are concerned, almost as bad as if no provision whatever had been made beforehand. Again, the necessities of the campaign require the staff of the surgeons, with their assistants, to leave their wounded and to follow the marching columns, to be ready for the next engagement. In these emergencies, the *Volunteer Aid* associations have rendered important services. Their organization enabled them to undertake the conveyance of the wounded already sufficiently restored to bear locomotion to their permanent abodes, to take charge of those not yet ready to move, and even to go to the scene of battle and aid the regular medical staff in applying dressings to the wounded.

The transport of the sick is accomplished in the following manner: Trains of ambulance wagons, and of country carts, when, as has often happened, the former do not suffice, are organized to travel to the nearest station on a railway open to the Germans. To this station is sent a service of trains, composed partly of the long American cars used on the Würtemberg lines, and partly of luggage-vans. These carriages are fitted up with one or two tiers of cots, supported on elliptical springs fastened to the floors. In each train travel a surgeon, attendants, and nurses, with provisions and supply of medicines for use *en route.* When all is ready for evacuating the field-ambulance, the patients are fed, their wounds dressed, and their wants supplied as well as the resources they are about to quit will allow, and they are placed in carts—too often, alas! of the rudest description—in which they travel, whatever may be the weather, to the railway station. Here a corps of the Volunteer Association is ready to receive them; to lift each man from his wagon, carry him to the sheds, where the surgeons quickly change his dressings (often sorelay in need of it), feed him, and change his clothing, before he is deposited in his cot in the train. When all of the convoy is removed from the carts, the latter return to the field-hospital for a fresh detachment, and this process is repeated day after day.

The train starts on its journey, halting two or three times every day at towns *en route*, which receive a telegram announcing the approach of the convoy, in order that when the train arrives everything may be ready for dressing their wounds, and giving the sick a hot meal. The surgeons and dressers prepare their stores of lint, bandages, clean clothes, etc., and, by the time the train is due, the number of clerks, lads from shops and elsewhere, volunteers who have enrolled themselves for this purpose, appear on the platform ready to convey their patients to the dressing-places. If the train arrive after dark, the well lighted platform becomes, as the cars cease to move, a scene of picturesque activity. Carriage after carriage is quickly entered, the sick borne out, and their wants supplied. If they have not, as often happens, changed their clothes since the battle, they are re-clothed from head to foot. Having received a good meal, cigars or tobacco, and, if they can write, having delivered their letters to a clerk, who undertakes to post them, they are carried back to the train, which, as soon as all its occupants have been refreshed, resumes its journey. The lamps are then extinguished, the bearers, dressers, and cooks disappear, and stillness reigns, where, a quarter of an hour before, all was bustle without disorder. A striking feature of this scene was the contrast between the panic stricken and hungry, though patient, countenances of the wounded, and the fresh, cheerful—I may even say merry—faces of their attendants, who work with such hearty good will, that for a moment the idea suggested itself that these young lads must be relatives of the wounded soldiers on whom they waited with such tender devotion. When the train has deposited its burden in the destined hospital, it returns to the gathering place for a fresh convoy. In this way, enormous numbers of wounded and sick have reached the Fatherland, and even their native towns. As many as 40,000 patients have passed through Mayence alone since the first battle of the war; indeed they still come in crowds, 13,700 having been attended to at the halting place of Mayence during the eight days preceding my visit. Besides railway hospitals, sixteen Rhine steamers have been fitted up, and have conveyed many thousands down the river to the cities on its banks, in the easiest possible manner.

By these means, the sick, at first hastily collected into churches, houses and hovels, their wounds treated as well as the means at hand would allow, have been rapidly deported into permanent and properly prepared hospitals. The Germans have been taken into Germany, whither also the slightly wounded French have gone as prisoners of war, as soon as their recovery was sufficiently advanced. The French who were severely wounded in the battles near the frontier are passed into Belgium, where they have been received into hospitals prepared in every large town, and treated with extreme assiduity and skill, under the immediate supervision of the King and Queen, who, as is well known, are ever active in the cause of benevolence. Belgium, by allowing her railways to be used for the heavy traffic of the thousands of German wounded, and by receiving any German wounded who chose to stay in her hospitable cities, besides providing for thousands of luckless French, has not only suffered inconvenience, but also serious loss by the war. She will, I trust, be well repaid by the lasting gratitude of both France and Germany.

The Treatment of Malignant Tumors by Electrolysis.—Since the publication of my first case of successful treatment of a malignant tumor by electrolysis, I have received a great many letters upon the subject from physicians in different parts of this country and of Europe. Almost all refer especially to two points—namely, the subsequent fate of my first patient, and whether other cases have confirmed the correctness of my views with regard to the efficacy of the electrolytic treatment of malignant tumors. To these two questions I am now able to give a positive answer.

It will be remembered that my first patient had been examined by most distinguished surgeons in Europe and America, who all declared him to be affected with a general cancerous diathesis. After the extirpation of his tumor in the left mammary region, the axillary glands of the same side became affected, and were subsequently also removed by a surgical operation. The extirpated tumors were examined microscopically in Paris and New York, and found to be real cancers. Finally, a third tumor developed itself in the right mammary region, which entirely disappeared after my electrolytic treatment in April, 1869. From that time no new cancerous deposits appeared anywhere, and the general health of the patient, which was in an alarming condition before the electrolytic treatment, became excellent in all respects. The patient continues to do very well, now a year and a half after the electrolytic treatment.*

Since May, 1869, I have treated with the same happy result eleven other patients affected with malignant tumors, almost all of them scirrhous. In some of these cases surgical operations had been already performed previously, and the extirpated tumors presented the microscopical appearance of cancer. All the cases exhibited signs of malignancy by their consistency, or by the character of the ulcerated surface, and by the affection of the lymphatic glands. In all these cases, the detailed history of which will be given hereafter, the tumors entirely disappeared after the electrolytic treatment, and no new deposits could be detected anywhere.

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* In one of his last letters to me he writes: "I feel that to you far more than to any other mortal am I indebted for the preservation of my life through the fearful perils of erysipelas and attendant fever, and to you also must I ascribe the dispersion of the cancerous tumor in my right side by your electrolysis. You told me you believed you could destroy it, and you did so. Absorption had proceeded to a very considerable extent before I left you, and continued until the breast became perfectly natural."

I have lately considerably improved the electrolytic method, so as to make it less painful and to shorten the time of treatment. But even during that time, the patient continues his usual pursuits and mode of life, as the treatment is not accompanied by fever or any other constitutional or local disturbance. To avoid hasty generalizations, however, and not to discredit the method, which certainly is destined to be of the utmost importance in the treatment of malignant tumors, I was careful in selecting my cases, and limited myself to the treatment of such malignant tumors as presented a hard consistence, and were of slow growth. From my present experience I have every reason to draw the following conclusions with regard to such scirrhous tumors:

1. That the electrolytic treatment is able to destroy malignant tumors in a harmless way.
2. That electrolysis is not only a local remedy, but also a powerful constitutional agent, capable of curing the diathesis and preventing relapses.
3. That malignant tumors ought not to be removed by the usual surgical operations, as these do not prevent relapses, and only hasten the generalization of the disease and its fatal termination.

At the request of some medical friends I brought this subject before the American Medical Association, on the third day of its meeting in Washington. Unfortunately, the attendance on that day was very small, but few surgeons being present, and probably no physicists. One of those present denounced this method, on the ground that he used the same apparatus with which I work, and yet with an utterly negative result. But from what he said, it was evident that he was not familiar with the elements of physics, and had used the anode, which he mistook for the cathode. Of course none but a negative result could have been expected from such experiments. Certainly the fact that my first communication has been published in *Virchow's Archives*, and reprinted in a great number of medical journals of France, England, Italy, and other countries, and has been quoted and favorably commented upon in the *Centralblatt für die Med. Wiss.*, *Virchows' Jahresbericht*, *&c.*, might have been a sufficient guarantee of the importance of the subject, even to those not acquainted with Physics and Electrophysiology.

In my work on the Galvanic Current, which will soon appear, I shall give a detailed account of the modified method which I am using, together with authentic cases, and my views concerning the development of malignant tumors.

I have no doubt that the electrolytic method will soon be found by competent and impartial judges to be a valuable contribution to surgery, in the interest of which I have undertaken these researches. W. B. Neftel, M. D.

Prof. Gunning S. Bedford, A. M., M. D., of New York.—This distinguished medical writer and ex-professor of obstetrics, died on Monday morning, September 5th, 1870, at 3½ o'clock, in the 64th year of his age. The sad event was not entirely unexpected by his family, as he had been suffering with paralysis for a long time. His funeral was largely attended at St. Ann's Church, Eighth street, on Wednesday, September 7th. A solemn requiem mass was celebrated by Rev. Father Preston. Archbishop McCloskey, a former fellow-student of the deceased, was present, and in well-chosen words alluded to his many virtues and high medical and oratorical attainments.

Gunning S. Bedford, A. M., M. D., was born in the City of Baltimore, Maryland, in the year 1806. He was the nephew of the distinguished Gunning Bedford of Delaware, who was the Attorney-General and member of the Legislature of Delaware when it first became a State; the latter also being one of the framers and signers of the Constitution of the United States. His uncle was the intimate friend of Washington, by whom he was appointed Chief Justice of Delaware, a position he held till his death in 1812. In 1825, Dr. Bedford graduated at St. Mary's College, Emmetsburg, with high honors. While at college he distinguished himself for his oratorical powers and beautiful diction, becoming renowned as a lecturer and speaker. He was unanimously chosen by his classmates as their "valedictorian."

After graduating, Dr. Bedford's first idea was to study law. With that intention he left Baltimore, with letters for Daniel Webster, intending to study law in that distinguished gentleman's office. When actually on his way to present his letters to Mr. Webster, he accidentally met an enthusiastic acquaintance who had just commenced the study of medicine. The acquaintance persuaded him to go with him and hear an anatomical lecture by Dr. John D. Godman. They went—the lecturer's subject was an interesting one—the circulation of the blood. Dr. Bedford was charmed and carried away with the eloquence of Prof. Godman, and determined at once to give up all idea of law, and commence the study of medicine. Immediately after the lecture, he went up to Dr. Godman and introduced himself, showing him his letter to Mr. Webster, and frankly acknowledging that the eloquence of the lecturer had converted him, and that henceforward he would devote his time and energies to medicine. He accordingly became the pupil of Dr. Godman, who in turn became his preceptor and friend, and who did much to advance him in his profession.

In 1829, Dr. Bedford graduated at the Rutger's Medical College. Soon afterward he married, and then visited Europe with the intention of advancing himself in his profession. He remained abroad for two years, during which time he devoted himself to his profession, visiting the hospitals and attending the different lectures and cliniques.

Shortly after his return to America, in 1833, he was appointed Professor to the Charleston Medical College, being but 26 years of age.

He was next appointed Professor in the Albany Medical College. After delivering several courses of lectures at the Albany school, he resigned and determined to visit New York, and make the city the field for his future exertions; and on his arrival here at once commenced a most lucrative and respectable practice.

Dr. Bedford was the first to conceive the idea of founding the University Medical College in this city. He made the suggestion to the late Dr. Valentine Mott, whose valuable aid was of great assistance. The Medical College was soon established, with the following distinguished professors: Paine, Revere, Draper, Patterson, Mott, and Bedford. The school was a great success. Dr. Bedford held the chair of obstetrics until ill-health forced him to resign, which was in 1862. During his connection with the college, he established an obstetrical clinique—the first ever held in this country. It was very successful, and was of great service to those who were too poor to pay a doctor's fee.

Dr. Bedford wrote many articles for the different medical journals, but his two great works are *Diseases of Women and Children*, and the *Principles and Practice of Obstetrics*. The former has gone through ten editions, and the latter five editions. They have been translated into the French and German languages, and have been very generally adopted as the text-books in the medical colleges in this country.

His first attack of paralysis was experienced while in the midst of an active practice, and while in his carriage on his way to visit his patients. This was in 1864. He has experienced four other attacks since that time.

He leaves a wife and several children to mourn his loss. Among the latter are Drs. Frederick Bedford and Henry M. Bedford, and Judge G. S. Bedford.—*Medical Record.*

Pepsin.—It is due to the valuable experiments lately conducted by Mr. Emil Scheffer, pharmaceutical chemist of Louisville, Kentucky, that we now possess a better knowledge of this remedy, as well as how it should be prepared. No wonder that many observant physicians have always contended there was no therapeutic value in the wine of pepsin. Their conclusions were right, for Mr. Scheffer has clearly proven that the alcohol contained in the wine destroys the pepsin. (*Vide Am. Jour. Phar.* 1870, p. 97.)

Consequently, no effects can be expected from a solution of pepsin in a solvent containing alcohol. Neither have I much faith in the dry pepsin, owing to its being mixed with half starch, which is apt to turn musty by the least attraction of moisture.

The gastric juice containing hydrochloric acid, induced Mr. Scheffer to adopt the more rational plan of preparing his liquid pepsin by using that acid and glycerine, a specimen of which I herewith present for inspection. The glycerine, in this case, not only acts as a preservative, but undoubtedly also produces a soothing effect on the irritated mucous membrane of the stomach. The dose is from one to two teaspoonsful after each meal, in cases of dyspepsia, indigestion, and vomiting of pregnant women. I am informed that the liquid pepsin, so prepared, has given entire satisfaction to many of the Louisville physicians who have prescribed it. It is my opinion that the profession have heretofore been greatly deceived by the so-called wine of pepsin, usually made from the rennet instead of the pepsin proper; and what little good they have seen may have been more owing to the slight stimulating effect of some good old "Sherry," than anything else. Rennet is made from the fourth stomach of the calf, and it is very doubtful whether identical with pepsin or not, because it has been proven that the most powerful pepsin is found in the carnivora, and next to them in the omnivora. C. Schmidt has demonstrated that the gastric juice of the dog dissolves from five to six times more albumen than that of the sheep, and Claude Bernard's experiments have also given similar results.

Mr. Scheffer is still engaged in further researches on this subject, and I hope may soon be able to tell us what relations, if any, rennet bears toward pepsin.

[Mr. Scheffer is worthy of entire confidence, and his pepsin is the most valuable that I have used.—E. S. G.]

Hydrate of Bromal.—There is a valuable article by Dr. E. Steinauer, of Berlin, in the last volume of *Virchow's Archiv*, on the action of the hydrate of bromal on animals and on man. The experiments were made in the Berlin Pathological Institute, and were under the immediate observation of Liebreich himself. The hydrate of bromal, according to the observation detailed, when administered to animals, undergoes a similar change to that undergone by chloral, being converted by the alkalies of the blood into bromoform. But this change goes on slowly, for at the end of an hour and a half, there was found in the blood, in addition to bromoform, still some undecomposed bromal. The substance is further oxidized, and evacuated in the urine as bromide. The symptoms produced by bromal on animals (frogs, rabbits, guinea-pigs,) were, first a stage of restlessness, followed by imperfect sleep and anæsthesia, and finally, dyspnœa, and death with or without convulsions. After large doses, both in frogs and rabbits, the heart was found, after death, relaxed and distended; whereas, after smaller doses, it was contracted. In the former case there is probably direct paralysis of the heart by the bromoform, such as occurs after large doses of chloroform. The preliminary stage of restlessness, which has no equivalent after administration of chloral, is ascribed to the action of the bromal aldehyde itself, the decomposition occurring, as stated above, more slowly than is the case with chloral. The author observed a stage of restlessness, after a hypnotic dose of chloral, in a patient suffering under gout, and he ascribed this to the acid state of the blood preventing the usual decomposition into chloroform. With this view he administered alkalies to the patient, and after a few days, the same dose of chloral produced the usual hypnotic effect. Proceeding from this, he applied the same principle in his experiments with bromal. Having injected carbonate of soda subcutaneously in rabbits, he then injected the hydrate of bromal, and found that the stage of restlessness was entirely absent. The author has administered bromal to man in only a few cases. He has found good effects from it in epilepsy, and in soothing the pains of tabes dorsalis. The method of administration which he has ultimately employed is, first, in the morning and at mid-day, a powder containing about 14 grains soda bicarb; then, in the evening, two to four pills, containing from ½ grain to 1½ grains of bromal.—*Med. Press and Circular.*

Therapeutics of Spinal Diseases.—Dr. Heaton, of Leeds, after giving the details of a case of paraplegia recently treated by him, says: "The therapeutics of spinal diseases seem to be very much in the shade. On the theory of causing absorption of effused matter into and around the cord, iodide of potassium was given. To lessen the blood supply to the congested structure, belladonna; aperients for torpid bowels, and electricity to maintain and promote the enfeebled muscular contractility. The benefit from any and all of these means was very small." We quite coincide in the gloomy view taken by Dr. Heaton as to the present state of therapeutics in spinal diseases.—*Med. Press and Circular.*

On the Combined Action of Morphia and Chloroform.—In a late interesting lecture before the College of France, Professor Claude Bernard points out some remarkable and valuable effects which may be obtained by combining the actions of morphia and chloroform (*Revue des Cours Scientifiques;* and *Bulletin General Therapeutique,* Sept. 30, 1869, p. 241). Some years ago, Dr. Bernard had occasion to administer a dose of morphia to a dog recovering from the effects of chloroform, and he was surprised to observe that the morphia reproduced the anæsthetic effect of the previous dose of chloroform. More recently this experiment was modified, so that a dog narcotized by morphia was completely and quickly anæsthetized by a quantity of chloroform very much smaller than would have been necessary to produce this effect in a dog in normal condition. It was further found, that when the anæsthesia had nearly disappeared, a second dose of morphia almost immediately reproduced it. It is well known that anæsthesia can not be induced by morphia. This alkaloid exalts the sensory excitability, and induces torpor and narcotism; it never destroys sensibility. Chloroform, however, rapidly suspends the sensory excitability. It is, therefore, somewhat remarkable that the anæsthetic action of chloroform should be increased and prolonged by morphia. Dr. Bernard believes that this can be explained only by supposing that the action of the one substance is superimposed on that of the other. When an animal is recovering from chloroform-anæsthesia, the quantity present in the blood is insufficient to completely suspend sensibility, although it is insufficient to greatly diminish it; but as morphia blunts the nervous sensibility, it aids the action of the chloroform, and thus a quantity of the latter, in itself insufficient to produce complete anæsthesia, becomes sufficient to do so when assisted by morphia. Bernard points out that this combination admits of several valuable applications, and that, indeed, it promises to be the best method of inducing anæsthesia. By administering a dose of morphia before commencing the inhalation of chloroform, anæsthesia is induced without any initiatory stage of excitement and without incurring the risk of those accidents which are occasionally caused by a large dose of chloroform.—*Jour. Anat. and Phys.*, Nov. 1869.

Ipecacuanha Cultivation in India.—It is stated in "Nature" that there has been a good report made of the progress of ipecacuanha culture in India, where it is found so valuable in that prevalent disease, dysentery.

It will be remembered, that ipecacuanha was introduced into Europe more than two centuries ago, as a remedy for dysentery, and that Helvetius subsequently employed it as a nostrum, and having cured by it the dauphin and several distinguished persons of the court who were troubled with dysentery, he sold his secret to Louis XIV, for one thousand Louis d'or. Baglivi says: "The root of ipecacuanha is a specific and a remedy almost infallible in the dysenteric fluxes." It has been used with success by a large number of British practitioners in India, and its value is generally recognized. [A surgical ignoramus of Louisville, Ky., has publicly claimed to have originated this practice.]

MEDICAL NEWS.

"Nulla dies sine linea."

Medical College of Mobile, Alabama.—The Faculty of this college advertise in their circular, that they will charge nothing for tuition, but $25 for matriculation. The reason alleged for this course is, that the college was well equipped by the State, and that the members of the Faculty do not need money. This is the best joke that has ever been perpetrated. One can imagine that he hears the cachinnations of every reader of this most remarkable statement. The Faculty of this remarkably equipped college charged, last year, $140 for tuition, and $5 for matriculation—since that period they have acquired great wealth! The statement that a body of old Confederate surgeons does not want money, should certainly be incorporated in the next edition of Joe Miller's almanac, as the best joke extant. Grimaldi, in his palmiest days, as the great harlequin of his time, never conceived of a jest so stupendous. In New York, about the Bowery region, was to be seen the following announcement of an old Jew: "Made money enough; don't want any more; about to move to the country." The public rushed in for bargains. Discarding the rush, and the parallel is complete—no more money is wanted by this Faculty, and there is to be a removal; but whether this be voluntary or involuntary, the Alabama State Medical Society will decide.

The Sleeping Beauty.—It seems that the scientific and general public are under the impression that Miss Goodsey, "the sleeping beauty," has just attracted attention; this is a great mistake. A full report of her case was published in the number of this journal for November, 1867; just three years ago. As she is now, she was then. The skeptical physicians of St. Louis have gained no reputation in her case. They have made a most laughable error.

The American Chemist has been recently purchased, and is now published by William Baldwin & Co., 434 Broome street, New York. This is an excellent work, and has been much improved by its worthy, energetic proprietors.

Ling Wau, a Celestial charlatan, has taken up his abode in New York, and advertises, not only an imported materia medica, of three hundred "remarkable Chinese medicines," but imported apothecaries to dispense them. In this connection it may be of interest to remark that San Francisco custom house authorities recently seized an invoice of "remarkable Chinese remedies," consisting of pickled monkeys, dried toads, and such like medicinal articles.—*Medical Gazette.*

The prize of one hundred dollars, gold, offered in New York by the *American Journal of Obstetrics* for the best essay on the Morbid Anatomy of the Placenta, was awarded to the paper bearing the motto: "*Veniet tempus quo ista quæ nunc latent in lucem dies extrahat et longioris ævi diligentia.*" On breaking the seal of the accompanying envelope it was found adjudged to Jas. T. Whittaker, M. D., of Cincinnati.

St. Louis has taken the initiative in regulating prostitution, a matter which must, sooner or later, be taken cognizance of in all large cities. The "social evil" will always exist, and we can do little toward limiting it; but we can do something toward limiting the spread of syphilis, and it is high time that we should direct our energies to the task.—*Medical Gazette.*

Dr. Henry J. Bigelow, of Boston, has recently presented the Massachusetts General Hospital with a complete set of surgical instruments, made under his direction in Paris and London; and also a permanent fund for their renewal, and has subscribed for a free bed for five years, the whole donation amounting to $5000.

The Medical Times is a new semi-monthly journal of medicine, the first number of which dates with October 1, and is already on our table. It is a sixteen page, double column journal, and filled with the usual variety of lectures, original papers, miscellany, etc. It is in all respects creditable to the publishing house of Lippincott & Co., and will, doubtless, receive a good support, and yet not sap the strength of existing journals. Price $4 a year.

Death of a Russian lady from Glanders.—We learn from the *Court Journal,* that the charming Madame Palesikoff was taken ill with glanders, in Berlin, and died in a few days. One of the horses belonging to her carriage touched her cheek, and caused the trouble.

Placentitis.—Inflammation of the placenta is of rare occurrence, and was first mentioned by Guillemeau, in 1648, in his "Œuvres de Chirurgie." Brachet, in 1828, fully described the condition of hepatization, which he considered one of the stages of inflammation. It was recognized also by Desormeaux and Paul Dubois, and others down to our own times.

The Force of Uterine Contraction.—The extreme force of uterine contraction produces a pressure of 3.402 ℔s. per square inch, which is equivalent to a pressure of 54.103 ℔s. acting upon a circle of 4½ inches in diameter, which is assumed as the average area of the pelvic canal. The maximum force used to expel the fœtus, by both uterine and abdominal muscles combined, is estimated by Joulin, by forceps experiments made on the dead body, at 110.23 ℔s., a result which is regarded by Dr. Duncan as too large. Dr. Duncan considers 80 ℔s. as the maximum force ever employed in difficult cases. This would correspond with an hydrostatical pressure inside the uterus of 5.03 ℔s. per square inch, which is greater than the uterine muscles, unaided, are capable of producing.—*Dub. Quarterly Journ. Med. Sciences.*

The Sewing Machine on the Health of Female Operators.—Dr. Decaisne (*l' Union Medicale*), after a careful investigation of 661 female operatives upon the sewing machine, proves that these operatives are not, as has been pretended, more subject than other working-women to metrorrhagia, peritonitis, miscarriage, and leucorrhœa; and that the cases which have been reported, are evidently simply coincidences, and the result of a labor too severe for the woman's strength. As regards the machines with the women as motive agent, those with isochronous pedals should be preferred to those with alternate pedals; in this way the operator is guarded from any excitation.

Defect of Epiglottis.—In place of the epiglottis as normally fashioned, there was found by Dr. Eberth, in a female fifty-six years old, merely a fold of the mucous membrane, 5 mms.

high and 1 mm. thick, with a crescentiform body of a fibro-cartilaginous consistence 3.5 mms. high. From the point of insertion of this fold of mucous membrane of the pharynx spread two other wider folds, which turning backward, under the pointed angle, united, and with the epiglottidean fold closed the three-cornered glottidean cleft. There was no reason to infer that in this case the defect of epiglottis was a secondary abnormity, it was evidently congenital. There were only slight functional disturbances. The case is one seldom met with. Dr. E. cites, as the only recorded case besides his own, that of Targion Tozetti; even in this case, however, J. F. Meckel believes the defective epiglottis to have been the result of disease occurring after birth.—*Virchow's Arch.* xliii.

The Lower Forms of Vegetable and Animal Life.—Professor George Rollestone, of Oxford, in his late book on "Forms of Animal Life," gives a new criterion by which to distinguish animals from vegetables. He says that in the case of all animals the embryo absorbs its yolk from the inside, while in vegetables the germ of seed is surrounded by its albumen. This is a remarkable foreshadowing of the way in which the adult animal or plant absorbs its food, the former by placing it within itself for digestion and assimilation, while the latter takes its food from outside.—*Med. and Surgical Reporter.*

M. Broca recently exhibited before the Imperial Society of Surgery in Paris the heart of a man, thirty-one years old, who, with intent to commit suicide, had stabbed himself in two places in the fifth intercostal space. Fifteen days after the injury he died of pyæmia, having, in the interval, inflicted other injuries in the neck and the temple, with a fork. At the autopsy, it was found that the heart and pericardium had received a penetrating wound. The pericardium was cicatrized. A false membrane bound the right edge of the heart to the parietal fold of the pericardium. On the inner surface of the left ventricle, near the apex, was a firm cicatricial depression. The case demonstrates that solutions of continuity in the cardiac walls are susceptible of being readily healed.—*Ibid.* August 5, 1870.

Pulmonary Fetor.—Dr. Laycock (*Edinburgh Med. Jour.*) asserts that there are three distinct kinds of pulmonary fetor—that of ozæna, that of fæces, that of gangrene. The latter, due to putrescent decomposition of pulmonary tissue, is characteristic of true gangrene. The ozæna odor is connected with chronic tissue changes of rheumatic origin, as with fibrinous exudation and degeneration. It is found chiefly in fetid bronchitis and bronchorrhœa, and in fetid fibroid vomicæ. The fecal odor may also be observed under these circumstances, and has too, probably, a rheumatic origin.

To Detect Uric Acid in the Blood.—Dr. Garrod's ingenious plan of detecting uric acid, which is always in great excess in gout, is as follows:—It consists in obtaining the crystals of uric acid on a thread placed in a mixture of the serum of the blood, or of the fluid from a blister, with acetic acid, in the proportion of six minims of the acid to each fluid drachm of the serum.

The Coating of the Tongue.—J. M. Da Costa, M. D., of Philadelphia (*Medical Diagnosis*), gives the subjoined variations of the coating of the tongue: In health, the tongue has hardly a discernible lining; disease quickly gives it one. In inflammation of the respiratory textures, at the commencement of fevers, in disorders of large portions of the abdominal mucous tract, the epithelium accumulates, and the tongue has a loaded, whitish appearance. The coat is apt to be yellowish in disturbances of the liver, and of a brown or very dark hue when the blood is contaminated. But we must be very sure, in drawing our inferences, that the abnormal aspect be not due to the food partaken of, or to medicine. Its color is also modified by the character of the occupation. Thus, as Chambers asserts, there is a curious, smooth, orange-tinted coating on the tongue of tea-tasters. A local cause sometimes gives rise to a thick, opaque coat. For instance, decayed teeth may produce a yellow sheathing on one side. Affections of the fauces also occasion a deep-yellow hue. Again, some persons, even in health, wake up every morning with their tongues covered at the back with a heavy coating, which wears off during the day.

Production of Bone from Medulla.—An interesting "provisional communication" appears in No. 24 of the *Centralblatt*, from the pen of Mr. Baikow, on the effects of transplantation of medulla. M. Baikow made two series of experiments. In one set, which were thirty-eight in number, the medulla from the femur or tibia of a dog was placed under the skin of the back of another dog; whilst in a second set, twenty-eight in number, the marrow was inserted beneath the skin of the back of the same individual. The first set of experiments all failed; bone was formed in none. In the second set fourteen cases succeeded—*i. e.* bone was actually formed; whilst in the remaining six cases the changes that occurred in the early stages were followed. The remaining eight cases were unsuccessful. In the fourteen successful cases bony masses were found in various stages of development, from the earliest rudiments to complete formation, with Haversian canals, lamellæ, stellate lacunæ, and medullary cavities filled with medulla. Up to the present time, M. Baikow's experiments extend only to the seventy-sixth day. In one case, at the sixty-first day, not only was complete bone present, but fibro-cartilage. The results of examinatious showed that the medulla, after transplantation, first passed into the condition of fibrous tissue, from which, by the poliferation of the cellular elements, bone or cartilage was developed. M. Baikow's results are in opposition to those of M. Ollier, but corroborate those of M. Goujon.—*Lancet.*

Cæsarean Operation after the Death of the Mother; Child Saved.—Dr. Beckmann published in the *Berliner Klin. Woch.* of December 20, 1869, the case of a woman, aged twenty-five, who, in the eighth month of pregnancy, died of apoplexy. With the consent of the husband, the Cæsarean operation was performed within five minutes after the mother's death, and a male child, weighing hardly four pounds, extracted. It was seemingly dead, but by dint of preserving efforts at artificial respiration, life was recalled; and by means of breast-milk obtained from a neighbor, the boy did well, and has been frequently seen by Dr. Beckmann since March, 1867, when the operation was performed. A similar case has been published by Dr. Ploss, in *Monatschr. fuer Geburt. und Frauenk.* of August, 1869.

The Streets of New York.—From a report made to the New York Board of Health we learn that there are 241 miles of paved streets in that city, and that each week 534 miles of street cleaning is done. Were all streets cleaned with equal frequency, the whole city would be subjected to this process a little oftener than twice a week. As it is, no paved streets are cleaned less often than once a week, while some receive attention several times a week. If the cleaning is well done, it would be a godsend to San Francisco were some of the contractors induced to immigrate here. Many of our streets are surely strangers to cleanliness. San Franciscans would be delighted if they were made acquainted with the broom as often as once a month.

A Strike Among Doctors.—The medical society of Camden, New Jersey, has bound its members not to make official *post-mortem* examinations for less than from $20 to $50—the price hitherto paid by the authorities being $10. A strike among doctors is a rare event, though we can not see why they have not a common right with others to the luxury.

Tincture of Erigeron as a Hemostatic.—A writer in the *Dental Cosmos* recommends tincture of erigeron as more efficacious than Monsel's Salt in arresting the hemorrhage following the extraction of teeth. We suppose the E. Canadense is the species employed—one of the most common and widely diffused weeds in America.

One of the latest tricks on poor, credulous mortality is a "wine" purporting to be made from sumach berries, and possessing no intoxicating qualities. It is recommended as a "tonic refrigerant!"

Mr. Fougera, of New York, the well known French pharmaceutist, has given $1,000 toward the fund for the relief of the wounded of the French army, and offers to be one of one hundred more to raise $100,000 for the same purpose.

Important Visitors to this Country.—It is announced that Professor Tyndall, the physicist, Dr. Hooker, the renowned English botanist, and Professor Huxley, the zoologist, will visit the United States and Canada, in 1872.

The Speculum.—Recamier enlarged his speculum in 1816, and introduced it to the world as a new and hitherto unknown mode of investigation, although it was well known and in constant use by the earliest practitioners of Egypt, Greece and Rome.

EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hor.

In consequence of the continued sickness of the Senior Editor, the Editorial Department is necessarily omitted.

BOOKS AND JOURNALS RECEIVED.

Notes on Life Insurance. By Gustavus W. Smith, Atlanta, Ga. Published at the *Kentucky Yeoman* office, Frankfort, Ky. 1870.

Transactions of the Seventeenth Annual Meeting of the Medical Society of the State of North Carolina. Wilmington: Engelhard & Price, 1870.

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Transactions of the Ohio Medical Society. Columbus: Nevins & Myers, 1870.

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The Raising and Education of Abandoned Children in Europe, with Statistics and General Remarks on that subject. By Abraham Jacobi, M. D. New York, 1870.

A Guide to the Examination of the Urine. By Dr. Wickham Legg. Philadelphia: Lindsay & Blakiston, 1870.

The Physical Exploration of the Rectum. By William Bodenhamer, A. M., M. D. Philadelphia: Lindsay & Blakiston, 1870.

Proceedings of the Academy of Natural Sciences of Philadelphia. No. 2—1870. Philadelphia Academy of Natural Sciences, 1870.

Answer to Dr. W. Ruppauer, with a Review and Criticism of his Recent Report of a case of Laryngo-Tracheotomy. By Lewis A. Sayre, M. D. New York: D. Appleton & Co. 1870.

SIR, JAMES SYME.

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ORIGINAL COMMUNICATIONS.

"Qui Docet Discit."

ART. I.—VOLUNTARY STARVATION FOR FORTY DAYS, FOLLOWED BY DEATH.

By FREDERICK DORSEY, M. D., Hagerstown, Md.

In the life of a physician, cases occasionally occur, which on account of their peculiar nature, possess more than ordinary interest. The one I desire to report, attracted the attention of the profession in this vicinity, and has been watched with much interest: A young man, twenty-two years of age, a son of one of our most prominent citizens, had been laboring under a religious delusion, in regard to his spiritual welfare, for eight or nine months, being on every other subject intelligent and rational. He became possessed with the idea, about six weeks before his death, that he must imitate the example of his Savior, and had received a direct and positive command from the Almighty, to fast *forty days and forty nights*, after which, like Him, he would be an-hungered. It was his firm conviction that he was under the special care and protection of God. That during his fast he would be enabled to remain upon his feet, and that at the end of the forty days, his appetite would return, and he would be enabled to eat with impunity, anything he might desire. Nothing his family or friends could say, had any effect upon him. All efforts to divert him from his purpose failed. This state of mind was evidently produced by *onanism*, as was acknowledged by himself to several of his most intimate friends. He began his fast on the 12th day of July, at 10 o'clock A. M. He weighed at that time 135 pounds. In three weeks he lost thirty-three pounds, at his death he could not have weighed more than seventy pounds. At first he drank large quantities of water, as much as two or three gallons per day; towards the end he drank but little, the last day or two none. He smoked incessantly during the first three weeks; the latter part of the time he was compelled to give it up. His kidneys acted freely four or five times every twenty-four hours. His bowels were moved but once every seven days. He would go to his meals regularly, and enjoy, as he said, the aroma of the different vegetables. No persuasion could induce him to taste a particle of nourishment. I am perfectly confident, as were all who were in attendance, that he eat nothing during the forty days and nights. He continued walking about the house until the evening of the thirty-ninth day, when he went to his bed complaining of nausea produced from the odor of his own breath, which was very offensive. Up to this time no one saw him professionally. On Sunday, August 21, 10 o'clock A. M., I was called to see him in connection with Dr. William Borth. Subsequently Dr. William Ragan ASKED PERMISSION FROM THE FAMILY TO VISIT THE PATIENT. From August 21, until September 1, he was visited at my request by Drs. Mason, Scott and Maddox. His condition August 21, 10 o'clock A. M., was distressing in the extreme. Great emaciation, pulse 60, temperature 75°, respiration 18, extremities cold, great nervous excitement. Gave beef tea and milk punch every fifteen minutes, in teaspoonful doses. 2 o'clock P. M. Pulse, 75, temperature, 80°; extremities, warmer. 6 o'clock P. M. No perceptible change. Rested well nearly all night.

Monday, Aug. 22, 9 o'clock, A. M. Greatly excited, pulse, 80; temperature, 90°; respiration, 18; extremities, cold; great desire to eat; talking incessantly; mind wandering. Gave beef tea and milk punch in increased quantity every half hour. 2 o'clock, P. M. Still greatly excited. Incessant talking, desiring solid food. Pulse, 90; extremities, warmer; respiration, 19; temperature 95°. 6 o'clock, P. M. More quiet. General condition better. Temperature, 100°; pulse, 95; extremities, warmer. Had a good night.

Tuesday, Aug. 23, 9 o'clock, A. M. Greatly excited. Craving for food. Pulse, 90; temperature, 100°; respiration, 16; extremities, warmer. Gave beef tea, milk punch, tapioca, and blanc-mange during the day. 2 o'clock, P. M. Mind wandering. Pulse, 90; temperature, 95°; extremities, cold. 8 o'clock, P. M. Mind wandering. Talking incessantly. Had a bad night.

Wednesday, Aug, 24, 9 o'clock, A. M. Great excitement. Skin cold. Pulse, 85; temperature, 90°. Refusing all liquids. Eat with apparent relish some grated cracker. Expressed a great desire for baked tomato, gave a small quantity. 9 o'clock, P. M. More excited. Pulse, 95. Skin hot. Respiration, 20. 11 o'clock, P. M. Pulse, 112. Delirious.

Thursday, Aug. 25, 1 o'clock, A. M. A copious stool, very offensive, dark chocolate color. 4 o'clock, A. M. Very weak. Another copious discharge; became very much excited, refusing all nourishment. 9 o'clock, A. M. Stupor. Pulse, very intermittent; extremities, cold; respiration, 14. 2 o'clock, P. M., same condition. 4 o'clock, P. M. Roused up and asked to see the members of his family. Refused all nourishment. Pulse, 70; extremities, cold and clammy,. 9 o'clock, P. M. Stupor. Pulse 60; respiration, 14; temperature, 80°; remained in this condition all night.

Friday, Aug. 26, 10 o'clock, A. M. Extremely weak.. Pulse, 49, intermittent; respiration, 10; extremities very cold and clammy. Mind wandering. Had refused all nourishment for thirty hours, from 4 o'clock, Thursday morning until 10 o'clock Friday morning, when he took some grated biscuit in chocolate. 12 o'clock, M. Revived, eat some biscuit and chocolate. 6 o'clock, P. M. Had eaten four biscuits with chocolate. Pulse, 80. Extremities warmer. General condition better than in the morning. Bad night. Had several copious stools, same odor and color.

Saturday, Aug. 27, 9 o'clock, A. M. Very wild. Pulse, 80; extremities cold; temperature 90°. 2 o'clock, P. M. Still wild. Eat some boiled rice. 6 o'clock. General condition worse.

Sunday, Aug. 28. 1 o'clock, A. M. Very wild. gave ⅛ grain of morphia, during the day increased the dose to ¼ grain, repeated every four or five hours. 10 o'clock, P. M., gave xv grains hydrate chloral. Pulse, 90; respiration under influence of chloral, 4 per minute. Skin cold, slight tympanitis. Applied hot poultices to abdomen. Extremities, rubbed with hot whisky.

Monday, Aug. 29, 2 o'clock, A. M. Repeated the chloral. Rested well until 10 o'clock, A. M. Gave some chocolate and repeated the chloral, was quiet all day. Pulse 85; Respiration, 14; extremities, warmer. 6 o'clock, P. M. No change. Had a good night.

Tuesday, Aug. 30, 9 o'clock, A. M. Delirious. Pulse variable, ranging from 75 to 90. Skin cold and clammy. Refusing all nourishment except occasionally a small quantity of chocolate. 6 o'clock, P. M. No change. Had a quiet night.

Wednesday, Aug. 30, 9 o'clock, A. M. Very quiet. Refusing all nourishment. Pulse, 75. Feeling much weaker. Gave injections of beef tea. Continued in this condition all day. Had a quiet night.

Thursday, Sept. 1, 9 o'clock, A. M. Very quiet. Still refusing nourishment. Pulse, 70; respiration, 10; temperature, 90°. 2 o'clock, P. M. Much weaker. Pulse very intermittent; extremities, very cold and clammy; respiration, 9. 8 o'clock, P. M. Pulse, 55, intermittent. A difficulty of breathing. Evidently sinking rapidly.

Friday, Sept. 2, 4 o'clock, A. M. Pulse at the wrist gone. Skin cold and clammy. 6 o'clock, A. M. Dead.

ART. II.—CASE OF POISONING BY MORPHIA. By CLAIBOURNE WATKINS, M. D., Little Rock, Ark.

Frank R., Oct. 24, lawyer, had been all day on a railroad excursion with a club of German Turners. Upon returning in the evening he called at H.'s drug store for an ounce of morphine, was refused such a large quantity, but the clerk gave him one grain which he swallowed at once. He then went to D.'s drug store and succeeded in procuring one drachm of morphia; this occurred a little after 8 o'clock, P. M. He went home and took one-half of the drachm of morphia in whisky. About half an hour afterward being, as he says, actuated by uncontrollable motives, he poured out the balance of the morphia into the same cup containing some whisky and drank it, this about 9 o'clock, P. M.; becoming frightened soon afterward he went into an adjoining room and informed his father of what he had done. I arrived at the house at 10 o'clock, saw the ⅛℥ bottle which had contained the morphia, the cup from which he drank, etc. He was then in the stage of excitement from the poison; he gave me a correct account of his getting and taking the morphia, which was afterward verified. He talked incessantly though with singular good sense and very unlike the fanciful hallucinations of De Quincy in this respect. I gave him sixty grains of ipecac in two doses which, with warm drinks, hot coffee, and frictions over the abdomen, produced vomiting in about half an hour. He began to fail rapidly now, pupils contracting, losing sight, consciousness and power of locomotion: relays of men were procured and with one upon each side as a support, the patient divested of all clothing except shirt and drawers, was kept in constant motion up and down a long open gallery (this was kept up until after daylight); strong decoctions of coffee were given at intervals, and two or three times whisky toddy was administered; by 11 o'clock I had procured ℥½ Fld. Ext. belladonna, and one of Kidder's six current machines. I gave the belladonna every twenty minutes in eight drop doses by mouth, and twenty-five drop doses by injection per anum, as seemed most expedient at the time. About midnight my patient was in a most deplorable condition, the skin had a cool, clammy feel, the patient was as limber as a rag—so great was the muscular relaxation; breathing at times stertorous and difficult, and he was so unconscious that the most painful flagellations elicited no response—my patient had taken 162 doses of morphia—and instinctively I looked to the belladonna as my sheet anchor, and I need hardly say with how much solicitude I examined from time to time those emphatically pin hole pupils, to note the antagonistic fight of these two poisons for the mastery. Shortly after 2 o'clock I was gladdened by just a perceptible increase of the pupil. I stopped giving the belladonna to watch its effects. The pupils gradually increased to normal size and afterward to somewhat beyond. I had given in three hours ʒii Fld. Ext. belladonna—near daylight, though exceedingly stupid and irresistibly sleepy, he yet could be aroused to partial consciousness. With some slight improvement he remained thus until at 7 o'clock, A. M., all the attendants having left except Judge R. (his father) and myself. He was taken very ill. Ghostly face, no pulse perceptible at the wrist; cramps, breathing again stertorous. Indeed, I thought that my hard night's work was all for nothing, but by good doses of whisky frictions, and the battery being brought into play, seemingly with good effect, (I had used the latter several times during the night, but am unprepared to say with how much benefit,) by these means vomiting of a very large quantity of cold black coffee mixed with grounds took place. Shortly after this the patient rallied again, and was now, with proper precautions, allowed to sleep. Called again in the evening; patient had slept nearly all day, had eaten some hot broth, was better; complained however of his throat, it was dry and red, and on the upper part of the chest was a slight scarlet-colored rash, phenomena, caused I suppose by the belladonna. I had some trouble and delay in getting an operation from the bowels, morphia had probably gotten the upper hand of the belladonna in the intestinal canal and paralyzed the circular fibers. Patient was able to be up a little the next day and made a good recovery.

ART. III.—IODIDE OF POTASSIUM AS A GALACTAGOGUE. By I. L. VAN ZANDT, M. D., Fort Worth, Texas.

Mrs. —— was confined March 5th, 1868. During the latter months of pregnancy she had suffered from nausea and vomiting to such an extent as to induce very great exhaustion and anæmia. She also during the time experienced several paroxysms of intermittent fever. Her confinement to bed was protracted for more than a month, when though very feeble she was able to look after her household affairs.

After this her improvement though slow was steady till about the 1st of June, by which time she had apparently attained to perfect health, as evidenced by the return of her usual weight, strength, and rosy complexion. All this time, however, the secretion of milk was deficient, and had failed to improve with her improving health, so that the babe consumed a pint of cow's milk daily in addition to the mother's supply.

About this time (June 1), Mrs. —— suffered an attack of rheumatism (sub-acute) for which 2 gr. pot. iodid and 12 gtts. vin. colchici rad. was given three times a day for about three days. During this time the secretion of milk increased to such an extent that on the third day not more than a gill of cow's milk was required for the babe. So soon as the pain in the rheumatic limb ceased the medicine was suspended on account of the patient's great aversion to medicine, and in a few days the amount of mother's milk had decreased to its former standard.

Some weeks subsequently it occurred to me that the increase in the milk might have been due to the medicine and not as I had at first thought attributable to a decrease in the exercise which had been necessitated by the attack of rheumatism. I therefore renewed the prescription and in four days my patient was enabled to dispense entirely with "the bottle," and had no occasion to use it again, only on one evening some weeks subsequently, when she had fatigued herself by over exercise during the day.

To this time, as I said, she had been gaining in flesh, now she ceased to do so, and in a short time began to lose though her health continued good.

I would say that just at the time she began the second time taking the medicine, by a different arrangement of her household matters, she was enabled to take less exercise, so that I was still at a loss to know to what to attribute the improvement, whether to the medicine or to the decrease of exercise.

Since I have prescribed the pot. iodid alone, in the same dose, with like effect in two cases that I can now recall, and in one in which no effect was noticed.

My friend, Dr. W. P. Burts, of this place, made the same prescription for one of his patients, and in three days the desired effect was produced. In this case the lady, from abscess, had lost the use entirely of one breast. No effect was produced on this one.

A patient of Dr. Patton's, of Quitman, Texas, was similarly troubled, and similar benefit followed the administration of pot. iodid, for some other indication.

Dr. D. M. Lipscomb, of Grape Vine Prairie, of this county, tells me that he has several times with benefit prescribed the pot. iodid, when the secretion of milk was defective, and once the pot. bromid.

The result of treatment in these cases does not accord with the remarks found on page 622 of Scanzoni's Diseases of Females, by the American editor, Prof. A. K. Gardner, as he there places pot. iodid among the ischogalactics, and cites several authorities confirmatory. What the explanation of this discrepancy in results may be, I will not now attempt to say, but will only note the fact that most if not all of these cases had been sufferers from malarial disease, and that pot. iodid has been found to be one of our best alteratives in chronic malarial poisoning.

ECLECTIC DEPARTMENT.

"Carpere et Colligere."

ART. I.—OXYGEN GAS AS A REMEDY IN DISEASE. By ANDREW H. SMITH, M. D., New York.

CHAPTER I.

HISTORY.—The therapeutical history of oxygen dates almost from the moment of the discovery of gas. A few months after he had succeeded in demonstrating oxygen as a separate principle, Priestley discovered its relation to animal life. He found that a mouse, confined in a limited quantity of this gas, lived, at least, twice as long as in a like quantity of common air. This fact led him at once to the suggestion, that this agent might be usefully employed, in cases of disease, in which there was deficient vitality. At the same time, the effect of plunging a burning body into oxygen, inspired him with a misgiving that oxygen could not be inhaled to any considerable extent, without danger of exciting excessive action in the system; that the patient would *live too fast*—a phrase which, down to the present day, never fails to rise to the lips of the practitioner, to whom this therapeutic measure is suggested for the first time. Thus early were the possible remedial uses of this agent foreseen, and, at the same time, an erroneous idea advanced, which has maintained its hold upon the professional mind, and prevented much good which might otherwise have been attained.

During the fifteen or twenty years following the discovery of Priestley, attention was directed more to the physiological and chemical relations of oxygen than to its use as a remedy. The part played by it in the animal economy was made the subject of investigation by Spallanzani, Fontana, Barthollet, Lavoisier, and others. To Lavoisier belongs the credit of first demonstrating the composition of the atmosphere and the changes produced in the blood by respiration. Following in his footsteps, Spallanzani showed that the consumption of oxygen was in direct ratio to the muscular activity of the animal. For instance, he found that the chrysalis consumed an exceedingly small amount, the caterpillar a much larger portion, while the active *imago* demanded a very large quantity for its support.

These researches led to the grand discovery, that the new element was the only one, a constant supply of which was necessary for the continuance of life. Food and drink could be withheld for days; even the nitrogen of the atmosphere could be excluded for hours, and yet no serious injury would result. But the animal *began to die* from the instant the supply of oxygen was cut off. No other element stood in this relation to life. No wonder, then, that it was called *vital* air, and that its discovery was thought to have begun a new era for humanity.

The first case in which oxygen was actually employed as a remedy was one reported by Caillens, in 1783. I can find only a reference to this case, which was published in the *Gazette de Sante*. But, in the year following, Jurine, of Geneva, published an essay, in which he cites, at some length, a case of phthisis in a young lady, which was very much benefited by daily inhalations of oxygen. In 1789, Chaptal, of Montpellier, reported two cases of phthisis, in one of which the gas produced great relief, while its use was continued, but in the other the effect was not beneficial.

At about this period the French Government desired an expression of opinion from the academy, upon the value of oxygen as a remedy, and Fourcroy was selected to prepare a report. In this report, and in other works which followed, he resigned himself to a current of speculation, which drifted him far away from the truth. He saw the effect of oxygen in the action of every remedy, even in muriatic acid, the composition of which was not then known. He claims to have employed oxygen in a considerable number of cases of phthisis, and to have noted a rapid improvement for two or three weeks, after which a violent inflammatory action was set up, and the progress of the disease was greatly accelerated.* But his subsequent experiments on animals, in which he describes a state of fever occurring, which eventuated in gangrene of the lungs, led to the suspicion that the gas which he employed contained some irritating impurity, which the imperfect chemistry of the day did not enable him to discover. He became, nevertheless, the founder of a school which interpreted all therapeutical effects by the supposed relation of the agent employed to the oxygen of the system. But it was not until Beddoes began his observations that any valuable practical results were obtained.

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*Annales Chimie, 1789.

In 1789, Beddoes published his book, entitled "Considerations on the Factitious Airs." He was at that time Professor of Chemistry at Oxford, but none the less devoted to the practice of medicine, in which he had already attained a high position. To him belongs the credit of being the first to approach the subject, without a theory to sustain. It was not until he had accumulated a large number of facts, that he attempted to arrange and classify them. His attempts at generalization were not always attended with the happiest results; but the readiness with which he relinquishes a theory the moment it is found to conflict with fact, gives a rare impression of candor and impartiality to his work. The scope of the work includes observations upon several gases beside oxygen, especially carbonic acid and hydrogen.

His physiological experiments are of great interest. The principal results which he arrived at were the following:

Oxygen produces a remarkable power of resisting asphyxia. It appears that when the blood contains an unusual amount of oxygen, the animal is better able to support a deficiency of respirable air, or even the presence of an irrespirable gas.

Animals which have respired oxygen resist longer the action of frigorific mixtures.

The action of oxygen seems to be localized principally in the muscular system.

Oxygen is in the highest degree a stimulus to the irritability of the heart and blood-vessels.

The last conclusion is one which succeeding observers will scarcely indorse to the fullest extent. As a stimulant to the circulation, oxygen is certainly far inferior to alcohol; indeed, in many cases, its stimulating effect is scarcely perceptible.

A few isolated cases of success, in the therapeutic use of different gases, encouraged Beddoes to set on foot the project of a Pneumatic Institute, in which this mode of treatment could be tested on an extensive scale. The plan enlisted the co-operation of Sir H. Davy, who gave himself with ardor to the chemical part of the work, and of the eminent engineer James Watt, whose genius left nothing to be desired in the mechanical appliances for administering the gas. Probably a more brilliant triumvirate was never combined in the furtherance of a scientific object.

In pursuance of their plan, a building was erected by public subscriptions. It contained small compartments, the atmosphere of which could be charged with any desired gas. In these rooms, the patients were allowed to pass a certain time daily.

The principal results obtained by the use of oxygen are summed up in the following table, from a review of Beddoes' work, which was published in the *British Library:*

CASES TREATED.	CURED.	RELIEVED.	NOT BENEFITED.
Obstinate Ulcers	2	2	...
Leprosy (?)	5	...	...
Spasms	3	2	...
Gutta Serena	...	2	3
Chlorosis	5	2	...
Epilepsy	1	...	5
Asthma	10	9	3
Cancer	...	3	...
Dropsy of the Chest	2	1	1
Hypochondria	...	1	...
Dyspepsia	3	1	...
Dropsy	2	1	1
Hydrocephalus	...	1	...
Headache	2	2	...
Poisoning by Opium	1	...	...
Paralysis	2	1	1
Scrofulous Tumors	2	1	...
Deafness	1	...	...
White Swelling	1	...	...
Scorbutus	1	...	...
Venereal	1	...	...
Melancholy	1	1	...
General Debility	1	...	...
Continued Fever	1	...	...
Intermittent Fever	1	...	...
Coldness of Extremities	1	...	...
Total	49	30	14

It will be observed that no cases of phthisis are included in this table. The explanation of this is to be found in the peculiar views entertained by Beddoes, as to the relation of oxygen to this disease. Accepting, without question the reports of Fourcroy, as to the ultimate acceleration of the disease by oxygen, he framed the theory that in phthisis there was a change, either in the constitution of the blood or in the substance of the lung, that favored the absorption of oxygen, which was, therefore, already present in excess. For this reason he considered oxygen as absolutely contraindicated.

In scorbutus, on the contrary, he supposed that there was a deficiency of oxygen in the system, which he thought should be supplied by artificial means.

The labors of Beddoes did much toward establishing the true position of oxygen as a therapeutic agent. They demonstrated, on the one hand, that the ideas at first entertained as to its curative power were extravagant; and, on the other, that it was an agent capable of producing good effects, in many cases not reached by ordinary means. The number and variety of diseases, in which the treatment was found beneficial, suggest, at first sight, a certain air of charlatanism, but subsequent observers have corroborated nearly all his statements. Nor, when we consider the physiological relations of oxygen, is it more surprising that its use should be applicable to a large range of cases than that modification of diet should be beneficial in so many divers diseases.

It is very remarkable that results as satisfactory as those obtained by Beddoes should not have led to a more general adoption of the treatment. But, with the exception of Hill and Thornton, who were contemporaries rather than successors of Beddoes, scarcely any British physician seems to have become interested in the matter, and it was allowed to die out with its original promoters. This was, doubtless, largely due to the difficulties which then beset the production of the gas, and its transportation to the bedside of the patient. Chemical manipulations were then but little understood, and chemical apparatus was very imperfect. Caoutchouc was unknown; and this simple fact alone would have made that very difficult which is now extremely easy. Indeed, when we consider the part which this substance now plays in the manipulation of the gases, it is not too much to say that its introduction was a necessary preliminary to their general use as remedies.

While Beddoes was carrying on his observations in England, the therapeutic use of oxygen was exciting no little attention in Germany. Numerous experiments and observations were made, during the decade preceding the opening of the present century. Prominent among them were those of Girtanner, who, following in the footsteps of Fourcroy, gave arsenic dissolved in nitric acid for a large range of complaints, under the impression that the solution imparted oxygen to the system. He was charmed with the effects of *oxygen*, given in this way, in *intermittent fever*. In the midst of similar speculations and theories, which seem to have taken the place, for the most part, of observations on the practical use of the gas itself, it is not surprising that little real progress was made in determining the true value of the latter.

At Geneva, however, the use of oxygen fell into more practical hands. The results obtained by Jurine served to encourage others. Odier, then a prominent physician at Geneva, took up the new treatment with great zeal, and the *Society for the Advancement of the Arts and Sciences* caused the founding of an institution similar to that of Beddoes. But, as in the former case, this was short-lived; and with its decline the whole subject of the medicinal use of oxygen sank into oblivion. The frightful epidemic of cholera in Europe, in 1832, brought it again into momentary notice, but, as it failed to answer the expectations of those who employed it, it relapsed into its former obscurity.

It is only within the last fifteen years that any serious attempt has been made to bring this agent again into use. Dr. Riadore, it is true, published some observations upon its use, in 1845, recommending it in cases of indigestion, debilitated conditions of the liver and kidneys, nervous affections, asthma, etc. But his cases were not numerous or striking, and failed to arouse the attention of the profession.

In 1857, appeared the first edition of a work on Oxygen, by Dr. S. B. Birch, of London. I have not been able to procure a copy of this edition, and the second, issued in 1868, seems nearly a new work. The writer claims to have presided at the *renaissance* of oxygen, and takes to himself the credit of having instigated all that has been done in the past few years to place its use on a solid foundation. His book consists of a selection of cases, preceded by some general remarks upon the properties and uses of oxygen, its *modus operandi, etc.* His ideas with regard to what he styles the *quasi-nascent* condition of oxygen are very peculiar, and are not borne out by the experience of others. Moreover, his style is singularly obscure, and his book lamentably lacking in practical directions for the administration of the remedy. While constantly insisting upon the necessity of *judiciously* selecting cases for treatment, of *judiciously* administering the gas, and of the *judicious* use of adjuvants, etc., he does not give a single practical rule for determining what is judicious in the premises. The cases which he publishes are very striking, one might almost say marvelous; and the impression which the work, as a whole, is calculated to make upon the reader is, that in the hands of the author, oxygen is almost a panacea, while, at the same time, it would be hopeless for the general practitioner to attempt to grapple with a treatment so intricate, and demanding such peculiar skill.

In sharp contrast with this work is the article on Oxygen, in Demarquay's *Essai de Pneumatologie Medicale*, published in Paris, in 1866. A little too diffuse, perhaps, it is still plain, simple, and to the point. The author tells his story as of one who has studied the literature of the subject, made some experiments himself, and treated quite a number of cases by the use of oxygen, sometimes successfully, sometimes not. With reference to its use in some diseases, while giving the experience and opinions of others, he states frankly that he has had no experience himself, and does not feel competent to judge of its merits. While it appears to me that some of his experiments on the physiological effects of the gas are defective, yet, others are novel and extremely valuable. His article is marked by perfect candor and frankness throughout, and is by far the best treatise upon the subject extant.

Dr. Herman Beigel, in his work on Inhalation, published in London, in 1866, presents a few considerations upon the use of oxygen, and cites a number of cases from his practice, in which he has used it with more or less benefit. He invented an apparatus for the production of the gas, according to Fleitmann's process, from the chloride of lime. His treatment of this subject is candid and unpartisan, and his conclusions demand respect.

A new era in the history of oxygen is being inaugurated by the invention of Téssie du Môtay, by means of which the gas can be produced in immense quantities from the atmosphere, and at an insignificant cost. Its possible future, in relation to medicine and hygiene, can as yet be only dimly discerned. When we shall be able to regulate the proportion of oxygen in the atmosphere of the sick-room, as easily as we now regulate the temperature; when closely packed and ill-ventilated tenements can be supplied with this element, the free enjoyment of which is necessary to health; when by its use the contamination of the atmosphere, by the furnaces of factories and machine shops, shall be prevented or counteracted, who can tell what will be the sum-total of the result? Yet all this seems now attainable, whenever the public shall become sufficiently awake to its importance.

CHAPTER II.

MODES OF PREPARATION AND ADMINISTRATION.—In the preparation of oxygen, for medical use, *purity* is, of course, of the very first importance. Undoubtedly, many of the effects formerly attributed to oxygen, such as the production of bronchial irritation or inflammation, and even of pneumonitis, were owing to impurities in the gas employed.

The first substance from which oxygen was isolated was the peroxide of mercury, and in all the earlier experiments, the gas employed was obtained from this source. It was not long, however, before cases of ptyalism occurring, warned experimenters of the danger of using the oxides of mercury for this purpose.

Chaptal showed, by carefully conducted experiments, that oxygen so prepared contained an appreciable quantity of the metal. The peroxide of manganese was then substituted, and, finally, chlorate of potash.

Recently, quite a number of processes have been added to the list, so that it now embraces a large range of procedures, by which oxygen may be obtained with more or less facility. I will touch briefly upon the more prominent of these, only one having been found by experience to be really adapted to the use of the physician:

1. Decomposition of binoxide of manganese. This is accomplished by heating the oxide to a red heat in an iron retort, or by treating it with sulphuric acid. In the first case, a high heat is required, and in the second the acid is disagreeable and dangerous in general practice. Moreover, the gas contains four or five per cent. of nitrogen, from the impurities usually contained in the manganese. If commercial acid is used, it also imparts its impurities to the gas, and among them usually a certain proportion of arsenic. These considerations have led to the complete abandonment of this method in practice.

2. The decomposition of sulphuric acid, or sulphate of zinc. This process depends upon the decomposition of sulphuric acid by heat into oxygen and sulphurous acid, or that of sulphate of zinc into oxygen, sulphurous acid, and oxide

of zinc. It is probable that oxygen could be produced in large quantities, in this manner, at a very small cost, so that it would be available for industrial purposes; but, for the use of the physician, the complexity and cost of the apparatus required render it an undesirable method.

3. Process of boussingault. This consists in procuring oxygen from baryta, in utilizing the property which the latter possesses of fixing the oxygen of the air at an elevated temperature, and giving it off again when the temperature is raised still higher. It is difficult to manage, however, and the results are not satisfactory. The apparatus, also, is bulky and expensive.

4. Reaction of sulphuric acid upon bichromate of potash. This reaction results in the production of oxygen and chrome alum. About 16 per cent. of oxygen is yielded by the bichromate. This yield is too small to render the method desirable, aside from the objections belonging to every process, which requires a powerful acid to be placed in unskilled hands.

5. Decomposition of chloride of lime by cobalt. The oxide or any of the salts of cobalt have the property of inducing a species of catalytic action between chlorine and lime, from which free oxygen and chloride of calcium result. An extremely minute quantity of cobalt only is required. If a stream of chlorine gas is passed into warm milk of lime, containing a little of a salt of cobalt in solution, the chlorine is absorbed, and oxygen is given off; and, at the close of the process, chloride of calcium will have taken the place of the lime. This method of procuring oxygen is known as Fleitmann's process. Now, by using chloride of lime, we have the chlorine and the lime united in one substance; and, by merely adding the cobalt, and pouring on a little hot water, the process is greatly simplified. The gas, however, contains considerable chlorine, and the yield is small in proportion to the quantity of material employed. This process is the one recommended by Dr. Beigel, for preparing oxygen for medical use; and his recommendation is sustained by Birch, who, however, prefers compressed oxygen, when it can be obtained. I have given the method a trial, but, in my hands, the quantity of gas was so small, and the quality so inferior, that I abandoned its use. However, as the cost is very slight, it might be used with advantage in office practice, where a large stationary apparatus could be employed, and where arrangements could be made for washing the gas

through an alkaline solution to remove the chlorine. But, for use at the bedside, an apparatus, small enough to be portable, would not yield the gas in sufficient quantities.

It remains to consider the method of obtaining oxygen by the decomposition of chlorate of potash. This substance having the formula $KO, ClO^5 = KCl + O^6$, is broken up by heat into oxygen and chloride of potassium.

By mixing with the chlorate a little peroxide of manganese, the disengagement of the oxygen proceeds with greater rapidity and requires much less heat. It is usual to invoke the action of catalysis to explain this, but it seems to me to be owing simply to the facility with which the manganese conducts the heat and diffuses it through the whole mass. Chlorate of potash alone is an exceedingly bad conductor of heat, as is also chloride of potassium. Hence the action of slight degrees of heat is confined to that part only of the mass exposed, which is in contact with the retort. But the manganese, being a heavy metallic substance, transmits the heat readily from particle to particle of the salt. Any other substance having an equal conducting power will do as well, provided it will not combine with oxygen. I have succeeded admirably with the black oxide of copper. Sand may be used, but with less advantage, as it is comparatively a poor conductor. It is generally stated that this process yields perfectly pure oxygen gas.

This, however, is not the case if the evolution is at all rapid, as the gas will then be slightly contaminated with chlorine. There is also another impurity, not noticed in any work on chemistry which I have seen. Pure oxygen, as is well known, is invisible, yet the product from chlorate of potash has usually more or less of a smoky appearance, when first evolved. If the gas be allowed to stand for half an hour, or an hour, it will lose this appearance, while the glass vessel in which it is contained will be seen to have a deposit on its inner surface. Under the microscope this deposit is found to consist of minute crystalline particles. If enough of these be collected to respond to chemical tests, they will be found to be chlorate of potash. It would seem, then, that a small portion of the chlorate, instead of being decomposed by the heat, is sublimed unchanged; and such is its insolubility that it is not separated from the gas, except by repeated washings. Not the least harm results, however, from inhaling it, as I have demonstrated repeatedly in my own person.

The quantity of gas procured by this process is very great, amounting in round numbers to 500 cubic inches, for each ounce of the chlorate of potash, or 39 per cent. by weight. The quantity yielded renders this method peculiarly adapted for use in the sick-room, where portability of apparatus and material is much to be desired. Until recently, I have employed a copper flask in which to heat the materials. But I found inconvenience to result from this form of container, inasmuch as the entire quantity of the chlorate was heated at once, resulting in a tumultuous and often unmanageable evolution of the gas. To obviate this difficulty, I have had constructed the apparatus figured in the annexed cut. It consists essentially of a brass retort, in the form of a cylinder, nine inches long and one and a quarter inches in diameter, resembling in shape a very large test-tube. To the open extremity of this retort is fitted a cover of cast iron, held in place by a clamp, which catches upon a projecting flange surrounding the mouth of the retort. This clamp is tightened by means of a screw. Passing through the cover is the tube carrying the gas into the wash-bottle, and which is arranged at a right angle to the retort. The latter is, therefore, in a horizontal position, and is supported by its connection with the wash-bottle, which in its turn is firmly fastened to a board, forming the base of the whole apparatus. The tube before referred to passes to the bottom of the wash-bottle, and has, near its lower extremity, a great number of very small holes, through which the gas escapes in fine bubbles. This is important, as it insures a much more perfect washing of the gas. Another tube, merely passing through the cap of the wash-bottle, provides for the passage of the gas into the bag, from which it is inhaled.

The retort is but half filled with the mixture of chlorate of potash and peroxide of manganese, and this quantity is distributed along its whole length, to within an inch of the cover, thus leaving nearly one-half of the diameter of the retort free for the passage of the gas. The heat of a Bunsen burner or of a powerful spirit-lamp is employed, beginning first at the closed extremity of the retort, and moving it along as the material becomes exhausted. The wash-bottle is half filled with a solution of caustic potash.

The advantage of this apparatus is, that only a small portion of the material is heated at a time, and the rapidity of evolution is under perfect control. By having two retorts, and using them alternately, a continuous supply may be kept up, sufficient for any emergency. The whole apparatus, including the bag, may be easily packed in a box ten inches square, and five inches deep, and a supply of gas may be generated in 15 minutes, at the house of the patient.

In using black oxide of manganese in connection with chlorate of potash, it is important that it should be free from protoxide, and from any combustible substance. Neglect of this precaution may lead to an explosion.

The process of Tessie du Motay is as follows: Manganate of soda is exposed to a very high heat in iron retorts, and while in that condition, a current of atmospheric air is passed over it. This results in the absorption by the salt, of a large portion of the oxygen which the air contains. The current of air is then shut off, and a current of superheated steam substituted. The steam withdraws from the manganate of soda the added quantity of oxygen, and carries it with it to a condenser, from which the oxygen passes in a pure state into the gasometer. The salt is then subjected to the action of a second portion of air, followed again by a current of steam, and thus the process goes on indefinitely. The manganate of soda retains its activity, and loses nothing in weight, so that the only consumption is that of fuel.

For use in the sick-room, the gas may be compressed into cylinders of copper or iron, and thus rendered conveniently portable.

In localities sufficiently near to a factory, this is destined to supersede all other methods of supplying oxygen for medical purposes. The gas is perfectly pure, and the quantity which can be compressed into even a small cylinder is sufficient to meet the requirements of any case likely to occur.

The method of administration of oxygen is very simple. The gas, being in a bag or in a gasometer, is conveyed to the mouth or nostrils of the patient, by means of a flexible tube, terminating in a mouth-piece of glass, hard rubber, or ivory. This being taken into the mouth, or held to one nostril, the patient breathes the oxygen, mingled with a greater or less proportion of common air, one or both nostrils being free for the admission of the latter. The proportion of gas is regulated by the size of the orifice through which it escapes. During *expiration*, the rubber tube is compressed between the thumb and index-finger. When the patient is not able to do this for himself, it may be done by an attendant, who, by watching the movements of the chest, soon catches their rhythm. I prefer this plan to the use of an inhaler, with a complicated system of valves, which always offers an impediment to respiration.

The quantity given will vary from one to two gallons daily, which is sufficient, in some chronic cases, to 80 or 100 gallons, which may be required in urgent dyspnœa. In chronic cases it should be given from a very small orifice, so that the inhalation of four or five gallons will occupy 15 to 30 minutes. Feeble patients should take it in the recumbent position.

The inhalations may be repeated morning and evening, or less frequently, as the case may demand. Some very striking results have followed, when the interval was as great as three days. On the other hand, when respiration is very much obstructed, it may be necessary to give the gas almost constantly, and but little diluted.

Knowing the capacity of the bag employed, and bearing in mind that an adult usually respires from eight to ten pints of air per minute, it is easy to judge approximately of the quantity of oxygen which is being inhaled.

The plan of surcharging the atmosphere of a room with oxygen, and allowing the patient to remain in it for a certain period, has this advantage, that, to retain the oxygen, ventilation must be sacrificed. If the room be so large as to do away with this objection, the quantity of oxygen required will be greater than can generally be supplied. These considerations have led to the abandonment of this mode of administration.

Dr. Birch lays great stress upon the gas being given in what he calls a "*quasi-nascent*" condition; that is, he thinks it should be inhaled at once as rapidly as it is generated, or, if not, that it should be kept under pressure until wanted for use. It is enough to say that he brings forward no facts to sustain the alleged advantage of this plan, and that, moreover, others who have not followed it have obtained equally good results.

CHAPTER III.

PHYSIOLOGICAL ACTION OF OXYGEN. — In regard to the physiological action of oxygen, the first question to be determined is, whether it is possible to cause the blood to take up more oxygen than it receives from the atmospheric air; whether the point of saturation is not attained in ordinary respiration. On this point, there was formerly but one opinion. It was thought that there was practically no limit to the power of the blood to absorb oxygen. This idea was no doubt in part based upon the known energy of combustion in pure oxygen gas, and the supposed identity of that process with the retrograde metamorphosis of animal tissue. It was held that the inhalation of pure oxygen would induce rapid chemical action within the body, that a state of general inflammation would ensue, and that destructive metamorphosis would be so much more active than the process of reconstruction, that the vital machinery would soon be spoiled and rendered incapable of continuing its action.

But, after a time, it was observed that these extreme results did not actually take place, that an animal could remain for a number of hours in pure oxygen, without sustaining any apparent injury. This led certain observers to the conclusion that the blood corpuscle became saturated with oxygen, when common air was breathed, and that it would take up no more, no matter how much was presented to it in the air-cells of the lungs. This view was defended by Regnault and Reiset, who endeavored to sustain it by the following experiment:—They confined animals in oxygen, and after a time examined the gas, and found that it contained no more carbonic acid than would have been exhaled in the same time if the animals had respired atmospheric air. That these experiments were not conclusive, will become apparent as we proceed.

On the other hand, was cited the fact that animals die in a period varying from three to eighteen hours, if confined in an atmosphere of oxygen, and that the tissues present an unusually florid aspect, approaching to a vermilion hue. These observations I believe to be no more conclusive than the others. On this point, Demarquay says: "Science had already taught what our experiments have confirmed, that animals can live without danger in an atmosphere of pure oxygen, and for a much longer time than in the same volume of air. But beyond a certain limit, these animals at last succumb, and one may then satisfy himself that the medium in which they have respired is still capable of relighting an ignited body; a very evident proof that death has taken place from the oxygen itself, and not from any alteration which it may have undergone from admixture with the carbolic acid exhaled."*

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*Essai de Pneumatologie Médicale, p. 644.

As the test referred to above, that of relighting an extinguished taper, the extremity of the wick being still red hot, is constantly relied upon to prove the respirability of the gas after such experiments, it is well to state at the outset that it is entirely worthless. This is shown by the following experiment:

EXPERIMENT I.—Two parts of pure oxygen were mixed with one part of carbonic acid, prepared by the action of sulphuric acid upon marble. A pint jar was filled with the mixture, which sufficed to relight a taper four times.

Demarquay himself states that ten per cent. of carbonic acid, mixed with oxygen, is sufficient to render the latter incapable of sustaining life; yet we find, by this experiment, that the test which he relies upon would indicate its respirability, when containing 33 per cent.

The apparatus employed by Demarquay in his experiments, which are essentially similar to those of his predecessors, consisted of a large cylinder, furnished with two openings, through one of which the animal was introduced, while to the other a tube was fitted, connected with a reservoir of oxygen. The animal, having been placed in the cylinder, a large quantity of oxygen was introduced by the tube, the amount being sufficient to drive out the air in the apparatus, which escaped by the other opening. When it was judged that the cylinder was filled with pure or nearly pure oxygen, both apertures were closed. The animals experimented upon were common fowls, pigeons and rabbits.

The result of these experiments was, that when the animals were allowed to remain in the apparatus for the space of an hour and three-quarters, and were then killed, nearly all the tissues of the body were found reddened to a greater or less extent, but the venous blood retained its darker hue. Two rabbits were allowed to remain until death took place, which, in one instance, was at the end of 14 hours, and in the other, after 17 hours. At the close of each experiment the gas was found to relight a taper.

These experiments coincide in their results with one of my own, in which the conditions were similar:

EXPERIMENT II.—*June* 10, 1860.—A rat was confined in a jar containing about a gallon of pure oxygen, and inverted over water. At the end of two and a half hours death took place. On opening the body, all the internal organs were found to be of a bright-red color.

It will be observed that, in both these instances, no provision was made for removing the carbonic acid and other products of respiration, and that the gas must have become excessively impure. In the following experiments this omission was corrected:

Experiments III, IV, and V.—*July* 15, 1869.—A pigeon and two mice were confined respectively three, four, and five hours in jars of oxygen, having a strong solution of caustic potash in the bottom, under a stage upon which the animal rested. The jar was so arranged, at the same time, that a small stream of oxygen, from a rubber bag, was constantly flowing into it, and escaping by an aperture of like size. The solution of potash absorbed the carbonic acid, while the gradual change of the atmosphere within the jar was sufficient to prevent a sensible accumulation of other impurities.

These animals, when killed, did not present any appreciable change in the appearance of the tissues.

Experiment VI.—*August* 25, 1869.—At 3 p. m., a pigeon was placed in a jar of oxygen, of the capacity of 300 cubic inches, and the jar inverted over a solution of potash. The following morning the animal was found dead. Upward of 150 cubic inches of oxygen had been converted into carbonic acid, and absorbed by the potash, the liquid rising in proportion in the jar. On opening the body, *no unusual redness of the tissues was observable.* The feathers of the bird, and also the sides of the jar, were wet with the condensed moisture of the breath. The animal was also in a constrained and uncomfortable position, which, doubtless, hastened its death.

The conclusion which I draw from these experiments is, that the lively red color of the lungs, heart, liver, etc., which are described, and which I have myself seen, does not depend upon hyperoxygenation alone, but also upon a coincident retention of carbonic acid in the tissues. The color pervades the intervascular substance as perfectly as the natural coloring-matter pervades the muscular fiber. It can not, therefore, be ascribed to simple increase of vascularity.

The following experiments show, that in Demarquay's observations, the oxygen is as little chargeable with the death of the animals as with the change in the color of their tissues:

Experiment VII.—*August* 13, 1869.—A mouse was confined in a jar of oxygen inverted over a solution of caustic potash. At the end of 25½ hours, during which he had neither food nor drink, he was dull and stupid, but, when released, ate greedily, and was soon as lively as ever.

EXPERIMENT VIII.—*August* 16, 1869.—A tin box, seven by ten inches, and six inches deep, open at the bottom, and having the top of glass, was placed in a shallow vessel containing a solution of potash. A little above the surface of the solution was arranged a false bottom of wire-cloth, which formed the floor of the apparatus. A circular opening on one side of the box was fitted with a projecting rim, soldered to its edge. To this rim or collar a cap was fitted, and the joint was made air-tight by an India-rubber band stretched around it. This opening was for the purpose of introducing the animal to be experimented upon. A small tube passing into the box was connected with a large reservoir of oxygen. By means of a small stop-cock, the amount of gas passing into the apparatus was so regulated, that a bubble would escape every second or two from under the edge of the box. Within the box was placed an open vessel containing chloride of calcium, to absorb the moisture from the breath, and another vessel with dilute nitric acid, to take up the ammonia exhaled. Food, water, and a quantity of tow for a bed having been provided, a mouse was introduced into the apparatus, and the aperture closed air-tight. Oxygen was then admitted freely, for some time, until all the air was expelled, when the stop-cock was closed to the point already indicated. The animal ate, drank, and arranged his bed, and acted in every particular as mice generally do, until the third day, when he buried himself in the tow, and seemed very quiet. By this time his excretions gave to the gas, which escaped from the apparatus, a very sickening smell.

At the end of four days, the mouse was removed and transferred to a cage, where he recovered at once his accustomed liveliness, and appeared no worse for his unique experience.

This single experiment is sufficient to overthrow the theory of hyperoxygenation of the blood, as the term is generally understood, and to show that the fatal results heretofore observed, as well as the peculiar *post-mortem* appearances, were the result of the admixture of the products of respiration with the gas inhaled.

Are we, then, to accept the conclusion of Regnault and Reiset, that inhaling pure oxygen makes no difference with respiration? Clinical observation and facts derived from experiments teach us clearly to the contrary.

The quantity of oxygen in the blood under normal conditions is extremely variable. This follows from the varying exigencies of the system. The transition from perfect repose to active exertion implies increased molecular action and increased consumption of oxygen. The blood-corpuscles are the carriers of oxygen, and, as their number remains the same, each one must assume a greater burden. To explain all the phenomena resulting from the inhalation of oxygen, it is not necessary to assume the absorption of more than corresponds with the extreme limit of this healthy respiratory demand. All the analogies of Nature lead us to suppose that this limit coincides with the point of complete saturation of the blood. To assume a margin beyond it is to suppose a provision against an emergency which can never arise. It is contrary to the economy of Nature that the blood should have the capacity for absorbing more oxygen than Nature can supply.

My view is then, that if pure oxygen be taken into the lungs, only as much will be absorbed by the blood as would be taken up from the air under circumstances involving the greatest possible physiological demand for oxygen. I know that it has been asserted that blood agitated in a vessel with oxygen will assume a livelier red than when agitated with common air. This, however, is a mistake. The change will take place more promptly with oxygen, but the hue will be in the end the same. We may, therefore, assume, that if the blood and the air be brought into sufficiently intimate contact in the lungs, the corpuscles will become saturated with oxygen from the ordinary atmosphere.

EXPERIMENT IX.—*August* 20, 1869.—A quantity of defibrinated sheep's blood was divided into two portions. One portion was thoroughly agitated with oxygen, and quickly assumed a bright-red hue. The other was agitated in the same way with common air. The change took place more gradually, but, eventually, when the two jars were placed side by side, no difference in the color could be distinguished.

The portion agitated with air was then placed in a vessel filled with oxygen, which was closed tightly, while its interior was made to communicate with a delicate manometer. After the lapse of an hour, during which the vessel was frequently agitated, no change had taken place in the hight of the fluid, in the instrument, thus indicating that no additional oxygen had been absorbed.

How, then, is this appearance of superoxygenation of the blood to be accounted for, since it never occurs when atmospheric air is respired? The conditions which obtain while breathing oxygen, without removing the products of respiration, are entirely *sui generis.* They differ from that observed when air is substituted, in that the portion of carbonic acid may become much greater without destroying life. They differ, also, from the effect produced by confining an animal in a mixture of carbonic acid and oxygen, since, in the latter case, the change is abrupt, while in the former it is very gradual. The experiments of Count Morrozo, and of Bernard, show what an immense difference, in the effect upon the animal, results from this circumstance. I offer the suggestion, therefore, that the red stain of the tissues is the result of the prolonged action of carbonic acid retained in the blood—life, meanwhile, being kept up, and the activity of retrograde metamorphosis sustained by a *maximum absorption of oxygen.*

When a considerable quantity of pure oxygen is inhaled, there is usually a sensation of freedom about the chest, as if respiration were easier. Some persons describe a feeling of warmth beneath the sternum, such as results from inhaling a slightly-stimulating vapor. Sometimes a slight degree of vertigo is produced. Generally there is a tendency of the blood to the surface, and the hands and feet, if previously cold, become warm. In some cases, this change of the circulation is accompanied by a prickling sensation. The pulse is sometimes accelerated, but more frequently remains unchanged. In cases of debility, it is often reduced in frequency. The temperature is but little changed, if at all. I have sometimes observed a disposition to yawn constantly during the inhalation, and there is generally an inclination afterward to sleep. All these effects are more marked when the gas is inhaled fasting.

In reference to the effect of the inhalation of oxygen upon the amount of carbonic acid formed, and of urea excreted, there has been as yet but little research. The experiments of Regnault and Reiset, upon the first point, have been already referred to. The subject, however, is beset with difficulties, and much caution is required in accepting the results of experiments as to the amount of carbonic acid exhaled, when breathing a greater or less proportion of oxygen. Different results will be obtained at different times, when breathing the same medium, under apparently the same conditions as to diet, stage of digestion, exercise, etc. The slightest bodily exertion, or even mental excitement, will vitiate the experiment. In experiments with animals, eructations of gas from the stomach will sometimes add largely to the percentage of carbonic acid obtained.

My experiments, on this point, have brought out an (to me) unexpected result, *viz:* that the inhalation of a considerable quantity of oxygen is followed, within a few moments, by a temporary *decrease* in the amount of carbonic acid exhaled, as is shown in the following table—the experiments were made upon myself:

	Hour.	Cubic inches of oxygen inhaled.	CO^2 exhaled per minute.
EXPERIMENT XI. July 29, 1869.	4.35 P.M.		21 c. in.
	4.45 "	600	
	5 "		19
	5.18 "		20
EXPERIMENT XII. August 3.	3.25 "		22
	4 "	400	
	4.10 "		16
EXPERIMENT XIII. August 5.	12.15 "		19
	12.25 "	700	
	12.30 "		16½
	12.45 "		18
EXPERIMENT XIV. August 5.	2 "		19½
	2.50 "	400	
	2.55 "		19½
EXPERIMENT XV. August 5.	2.55 "		19½
	3.15 "	1200	
	3.35 "		17½
EXPERIMENT XVI. August 12.	6 A.M. (fasting)		18
	6.15 "	500	
	6.40 "		17
	7		17½

EXPERIMENT XVII.—*August* 4, 1869.—A pigeon was placed in a jar containing 300 cubic inches of oxygen, and the jar inverted over a solution of caustic potash. After twenty minutes, the oxygen was removed and replaced by common air. In thirty minutes the volume of air had decreased 13 cubic inches. The following day, the same pigeon was confined again, in the same quantity of air, for the same period, not having previously inhaled oxygen. The decrease amounted to 18 cubic inches. There was no evidence that the health of the animal had been injured by the previous experiment.

The manner in which oxygen produces this effect is not easily explained. It is possible that its immediate action may be like that of alcohol, which is known to cause a diminution of the carbolic acid exhaled from the lungs. This is the more probable from the similarity of its other effects, when well marked, to those which alcohol produces.

Notwithstanding this temporary decrease of carbonic acid, I am of the opinion that the ultimate effect of oxygen is to cause its increase. The increase is probably small, and it would, doubtless, be extremely difficult to demonstrate it conclusively, under normal conditions of activity. Still, it seems to me, that the result of the following experiments could hardly be attributed to mere accident:

EXPERIMENT XVIII.—*August* 12 to 24, 1869.—Three observations were taken daily of the amount of carbonic acid exhaled by myself. In all, twenty observations were made, in seven days, nearly every hour of the day being represented. The average of these observations gave 17.2 cubic inches per minute. During the four following days, eleven similar observations were made—the conditions remaining the same, except that from six to ten gallons of oxygen were inhaled each day in divided doses. The average of these gave 18.9 cubic inches, as the amount of carbonic acid exhaled per minute.

These results, while they coincide with the generally received opinion as to increased activity in the retrograde metamorphosis, as resulting from the use of oxygen, show, nevertheless, that the increase is confined within narrow limits, and thus confirm the view already expressed, that saturation of the blood corpuscles with oxygen being quickly attained, is a *strictly physiological condition*, and in no way necessitates the setting up of any morbid action within the system.

To test the effect of oxygen upon the amount of *urea* excreted, I made the following experiment:

EXPERIMENT XIX.—December 8 to 22, 1869.—The urine for each twenty-four hours was carefully preserved, and the amount of urea estimated according to Haughton's second formula. The result is given in the following table:

DATE.	GALLONS OF OXYGEN INHALED	UREA IN GRAINS.
December 8		641
" 9	8	624
" 10	8	561
" 11	10	472
" 12	6	472
" 13	6	590
" 14	12	550
" 15	14	552
" 16	18	510
" 17		542
" 18		601
" 19		546
" 20		556
" 21		495

This table shows a rapid decrease in the amount of urea during the first four days after beginning the inhalations of oxygen. It then increased again, but did not attain to the former figure. With the cessation of the oxygen, there is again an increase. The average of the days without oxygen is 563 grains; of those with oxygen, 541 grains.

So far as these experiments go, they indicate that oxygen causes a *decrease* in the amount of urea formed. This is surprising, if we are to consider urea as the result of *oxidation* of tissue, as is generally held. More extended observation is required before it would be warrantable to call in question the views so ably enunciated upon this point; but should it be established that the continued use of oxygen really diminishes the excretion of urea, it would place the latter substance in analogy with the smoke resulting from combustion, a product, it is true, of the combustion, but, at the same time, a measure of the incompleteness of the process.

The quantity of uric acid in the urine is rapidly diminished by the daily use of oxygen. This fact, suspected by Dr. Golden (*Lancet*, March 10, 1866), has been fully established by Kollman, of Munich.

In the course of the experiments described above, I observed a very striking diminution of the coloring matter of the urine. At the commencement of the experiment, the urine was very high-colored, but within twenty-four hours it became very pale, and remained so for several days after the oxygen was discontinued. This paleness was not owing to an excess of water, as the specific gravity never fell bebelow 1.022, and was usually above 1.025.—*N. Y. Med. Jour.*

Art. II.—Simple Dressing by Continued Moisture. By Dr. Leon Le Fort.

The mortality after operations, higher in military than in civil practice, greater in larger hospitals of cities than in the smaller country hospitals, more cosiderable in those of Paris than in those of London, depends especially on the more or less frequent development of two formidable complications, pyæmia and erysipelas. Sometimes, in some of our hospitals, these diseases become so grave and appear with such frequency that they may be characterized as an epidemic, so that at such seasons, one can hardly make a simple incision without seeing erysipelas follow; while if operations of some magnitude are' ventured upon, is is dread of pyæmia.

Such a condition of things becomes a source of constant peril to our patients, but it is also of positive interest in the progress of science, unavoidably pre-occupied with the uncertainty of its results. Surgery in Paris is compelled to assume extreme caution, while elsewhere, surgical practice, without doubt occasionally rash, can proceed ordinarily to a degree of boldness excusable by the extreme rarity of those grave complications which are so frequent in the majority of our hospitals. When the diseases are seen to extend with all the characteristics of an epidemic, and when it is remarked, moreover, that these epidemics, like that of puerperal fever, are limited sometimes to one hospital, sometimes to another, and are confined to one series of patients without invading an adjacent number, it is hard not to confess that equally with puerperal fever, there exists an underlying cause for erysipelas and pyæmia, capable of producing these effects, and to be sought for in some other condition than the contagious or rather infectious character of accidental wounds, surgical or puerperal.

In order that such epidemics should develop, it is necessary that there should be one spontaneous case as the origin; they will therefore be rare in proportion as these single cases are [rare; and they will be more infrequent still, if, when these original cases occur, the morbid receptivity of the influence of the poisonous germ is observed to diminish in other patients.

To diminish the frequency of these spontaneous cases, or to prevent the general spread of these diseases, if we can not prevent their development in the single patient, is the problem. Independent of the constitutional conditions pertaining to race or previous habits of our patients, conditions which of course we can not control, three elements combine to render these complications more or less frequent, viz: the nursing, the diet, and the dressing employed.

The marked improvements introduced into our hospitals within the last ten years, the more general use of a regimen more largely restorative, and into which has gradually entered the use of tonics and stimulants, have changed our surgical results for the better. Hygiene and diet have a great influence on the more or less frequent spontaneous development of pyæmia, while the dressings used can prevent its spread; they can hinder not only the propagation, but even the inception of erysipelas.

If we can say "no epidemic without contagion," we can say with equal truth—no pyæmia, no surgical erysipelas, perhaps, indeed, no erysipelas at all, without a wound, either of the skin or mucous membrane. So, although the notion of the contagiousness of these diseases is far from being accepted by all surgeons, all or nearly all will from observation agree that atmospheric air plays an important part in their propagation, whether the infectious properties be ascribed to the air itself or be considered an element only in permitting or in producing the decomposition of pus and the formation of poisonous materials. Others, with equal truth, although led by other theories, have sought to prevent especially the absorption of the septic germs, by promoting the obliteration of the absorbed vessels, which exist at the surface of the wounds; this they attempt sometimes by modifying the methods of operating, sometimes by the use of astringent or caustic solutions as a dressing to the wound.

To substitute for the knife, which leaves the vascular openings patulous, some method producing instant obliteration of the vessels, has ever been the desideratum; it has been more or less realized by the use of the cautery in its different varieties; to which should be added the ligature, if it were not the same method used under another name and with less perfect means.

After having for a long time under the names digestives, maturatives, detersives, agglutinatives, resolvents, etc., multiplied the formulæ of ointments, surgeons have recently used hardly any except cerate; and this less to modify the condition of the wound than to prevent the dressings from sticking. Now, cerate has happily lost much of its old favor; abroad it has been almost wholly abandoned; and for my part, I have absolutely proscribed it, because as ordinarily used, a large share of the blame of traumatic erysipelas can be laid to its charge.

In a scientific spirit and with the hope and aim of reaching the original causes of erysipelas and especially of pyæmia, surgeons of the present generation, and many of our fathers, have originated and extolled various modes of surgical dressings. Although extremely diverse in the means employed, these methods all unite in the purpose to fulfill a common indication; and they can be classed in several distinct groups, of which we shall speak of the most important only, characterizing them according to their distinctive features.

To exclude the air was the object which M. Langier sought to accomplish by his "occlusive" dressing of goldbeater's skin. But this occlusion, although complete in wounds not long or deep, as in burns, for example, is very imperfect, if indeed it is attained at all, when applied to amputations which are suppurating profusely. The application of the beater's skin prevents, moreover, the discharge of pus, and necessitates more or less frequently the perforation of the distended membrane. M. Chassaignac's dressing by occlusion prevented, in great measure, the contact of the air and allowed the escape of the discharges. But this dressing, excellent as it is when applied to old wounds whose granulations are well formed, has diachylon as its base; and I believe the use of this agent is sometimes accompanied with danger, when it is applied to recent wounds; and its employment has seemed quite often to be the source of erysipelas.

If M. Chassaignac seeks by his dressing to favor the escape of pus, at least he does not consider the contact of laudable pus with the wound a source of danger. To prevent the decomposition of pus, and to remove it entirely as fast as it is formed, meanwhile excluding the air, is the object proposed in M. Jules Guerin's apparatus for continued exhaustion. This method is capable of giving excellent results in amputations, and it fulfills also an important indication we shall revert to hereafter, but the complicated apparatus and the difficulty of its adjustment are not unimportant objections.

Messrs. Mayor, of Lausanne, Langenbeck and Valette, of Lyons, have proposed to exclude the air, and to dissolve the pus as fast as it forms by placing the stump in a continued warm bath. This plan, belonging especially to the Berlin Professor, has given only unfavorable results at Paris; it is true the apparatus employed, very different as it was from that used in Germany, contributed much toward its failure, by tending to arrest the circulation in the stump by the compression at its base of an elastic band. This treatment has given, when properly applied, good results in amputations of the leg and forearm, but it is of very different adaptation to amputation of the thigh. The necessity of maintaining a uniform temperature in the bath and the need of special apparatus have done much to prevent its general use.

Treatment by baths of carbonic acid and of oxygen have been wholly abandoned.

The instantaneous occlusion of the vessels has been attempted by the use of dressings with certain agents which, like concentrated perchloride of iron, form a superficial eschar on the bleeding surfaces, or like alcohol, or diluted perchloride of iron, coagulate the albumen and aid in the formation of a clot at the mouths of a vessel. This method, in great favor for some years, is allied to the use of the actual cautery and of melted pitch so much used centuries ago; it has, indeed, the merit of being less painful, although it is not only devoid of pain, but it appears open to the grave objection that it does not accomplish all it claims.

Seeking simplicity in dressings and regarding it of prime importance to preserve the wound in as clean a condition as possible, the English surgeons have, for a long time, used hardly any dressing except compresses of lint saturated with water or some medicated solution; and to prevent the too rapid evaporation of the fluid, they cover the dressing with a smaller piece of air-tight material after the plan of Percy, Liston and Amussat. This practice, one of the best in its simplicity and in its results, is, however, open to some objections. Evaporation goes on in spite of water-proof cover, especially at the edges of the dressing, and the dryness causes the compress to stick to the surface of the wound at these points, after producing excoriation of the granulations and a slight loss of blood when the dressing is renewed; this is not a grave accident, indeed, but one which still has a certain importance, because in transforming into a sort of new wound, however small, an old wound and one whose granulations are in full progress, it becomes too often the source of erysipelas.

Convinced of the contagiousness of erysipelas and pyæmia, and believing that the propagation of the disease is by infection, and that the contamination has, as its agent or medium, germs which are carried in the air from one ward to another, to act as ferments on the surface of the wounds, Lister, of Glasgow, now professor in Edinburgh, seeks to destroy these germs in the wound. To attain this result, he washes the wound with a weak solution of carbolic acid, and covers it with a weak solution of the same agent, urging the precaution meanwhile, with considerable minuteness, to cleanse by the same means the knife which he uses, and to wash the ligatures in a mixture of the acid with oil. This antiseptic dressing enjoyed great favor in England for a time, but seems now in less use, from what I saw in a number of days' observation in London; but if it does not appear at present to give the same brilliant results, even in the hands of its originator, as were expected at first, if it does not seem to prevent the spontaneous development of erysipelas, it still appears at least to have some influence over the spread of this disease, as well as of pyæmia.

If we seek the indications which surgeons have attempted to fulfill by their various dressings, we find them as follows:

To exclude the air.

To change the condition of the wound, when expedient, by medicated dressings.

To maintain a certain degree of moisture.

To prevent the decomposition of the pus taken up by the dressing.

To keep the wound clean.

To prevent the adhesion of the dressings.

To destroy the germs which might be the source of infection.

A slight modification of the methods usually employed has enabled me, as I believe, to fulfill these various indications, as already stated. I have absolutely rejected all fatty agents whatever, and I extend the same proscription to diachylon, so far as fresh wounds are concerned; and in no case, at least in hospitals, do I use lint, because by its power of absorption it becomes the ready receptacle of infectious germs. I cover the wound with one or more compresses saturated with a mixture containing one part of alcohol and nine parts of water; if the wound needs stimulating, I add, according to the necessities of the case, a tenth part of the solution of sulphate of zinc. Over all I place a piece of oiled silk, kept in position by a few turns of bandage, and I take care that this covering shall be tight and entire. The evaporation of the fluid with which the compress is filled can not progress, and the insensible perspiration, which occurs normally on the surface of the skin, being retained, the dressing becomes converted into a sort of a continued bath.

Without the inconveniences of a maceration, which distends the tissues, and seems to lessen their vitality, without the annoyances caused by the necessity to use an apparatus applied with difficulty, I get the advantages of the bath of Mayor, Langenbeck, and Vallette, and those indeed of continued irrigation. The sedative effect of the water, modified according to necessity by the use of medicated solutions, controls the inflammation and keeps it within the bounds necessary to the process of cicatrization. The pus, excluded from the air undergoes no change; it remains indeed about the wound, but the air-tight dressing showed us long ago the harmlessness of unaltered pus. The compresses can not dry and adhere, and are easily removed, and there is no fear of bruising the granulations. As regards cleanliness, it is seen at once to be absolutely attained. Finally, with respect to infection and the transportation of germs, the wound, being wet at the outset with alcoholized water, covered with compresses filled with the same fluid, and inclosed hermetically in an impermeable tissue, is fully protected from all contamination. This innovation upon a dressing in such general use, consisting essentially in the employment of a piece of oiled silk larger than usual, presents such an appearance of insignificance that I should have hardly dared to introduce it if it were not recommended by results which have convinced me of its efficacy.

In the months of January and February, 1868, when I had not yet begun to use this mode of dressing, I had in my female ward at La Cochin, and in the same bed, three cases of erysipelas. During the rest of the year two other cases occurred; in 1869 there were two, and two this year, one following partial sloughing of the flap after amputation of the breast, and the other, very slight, and extending only to a part of the cheek and forehead, in a patient who had a granular conjunctivitis.

In my male ward during a very active service, in which were a great number of severe cases, not a single instance of erysipelas occurred in 1868 or 1869, and only one case in the first two months of 1870. This one case, so far from proving the inefficacy of the dressing, testifies in its favor. The patient had a large wound on the forehead, and another smaller one on the scalp. Both healed kindly, but a small boil appeared on the back of the head. Fearing erysipelas, on account of the region, I ordered the dressing, but a slight illness detained me for a few days from my visits. My interne, thinking the complication of little consequence, omitted the dressing, and erysipelas was the result of his confidence.

I do not have the hope, still less do I pretend to abort spontaneous cases of pyæmia. In thirty months I have lost, by this grave complication, eight patients; three after an attempt so save the limb in compound fracture of the leg, with protrusion of the tibia from the wound (a practice I have now abandoned), two after complicated fracture of the humerus, one after revulsion of the arm, one after a lacerated wound of the foot, and one following a whitlow; but this last patient, who succumbed five days after his admission, had already, when received into the hospital, the symptoms of pyæmia, whose first germs he had taken at La Pitié, from which he was discharged four days before.

On the other hand I have treated successfully, and cured without complication, four patients with fracture of the leg, one with fracture of the thigh, one with fracture of the clavicle, two with fractured humerus, one with fracture of the fibula—all compound; two others, in which there was fracture of the elbow-joint, with an opening into the articulation, and, finally, one in which was a fracture over and between the condyles of the femur, with protrusion of the bone, and escape of blood and gas into the knee-joint.

Capital operations have given the following results, viz:

	Cases.	Cured	Died.
Disarticulation of the shoulder-joint for gangrenous erysipelas, in a patient from medical side	1		1
Amputation of arm	1	1	
" of thigh	3	3	
" of leg	6	5	1*
" of foot	2		2†
" of fingers	3	3	
Partial resection of tibia, olecranon, fibula	3	3	
Resection of lower jaw and part of tongue	1	1	
Resection of knee-joint	1	1	
	21	17	4

The effect of this dressing on the progress of diffuse cellulitis or phlegmonous erysipelas has seemed to me equally remarkable. The affected part being kept in a sort of continued bath, which does not cause maceration of the tissues, its swelling and redness are observed to diminish. I make use of Dobson's plan, however, when the disease is first commencing, and paint the part with tincture of iodine. Whatever part belongs to the antiphlogistic remedies, and what to the dressing, out of thirty-six cases of diffuse phlegmonous erysipelas (eighty-seven cases of the hand, six of the hand and forearm, one of the wrist, eleven of the forearm, seven of the arm, two of the leg, and one of the scalp), I have not had a single death—all rapidly recovering without even incurring those deep and extensive lesions which too often leave in their train complications more or less severe.

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* Pneumonia.

† One well, but died of phthisis after five months.

If, in fino, the dressings used can have any effect on the appearance of the complications so common in some, if not in the majority of our hospitals, it is especially with reference to erysipelas that this influence is to be sought.

Recalling the time when, as assistant to my teachers at La Charité, Messrs. Denonvillers and Velpeau, I hardly dared to open an abscess, for fear of the supervention of erysipelas, I am deeply impressed on seeing two years go by without the development of a single case in a ward where a great number of men were treated for wounds and lesions often of a grave nature. Formerly when I performed an important operation, like an amputation, my chief anxiety was lest pyæmia should follow; what I anticipated as a constant dread was death; what I now expect as the proper result of active intervention is recovery.

However slight may be the innovation I have introduced in dressings, I can not but think that to it is to be accredited a considerable share in the result attained. Without doubt it would be better to compare the results of a longer period—two or three years more—in order to place me beyond the error of premature judgment; but I believed if the confidence in facts observed was well grounded, our patients would be much benefited by a useful precaution; I thought that the introduction of this method into hospitals where erysipelas and pyæmia have prevailed for many years would allow its efficacy to be tested more fully; I hoped that if farther facts do not justify my expectations, the good will and indulgence of the academy would pardon me for having deprived it, on a subject of so light consequence, of time which it could have employed more usefully.—[Translated by F. W. Draper, M. D., for the *Boston Medical and Surgical Journal.*]

ANALYTICAL DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."—PLAUTUS.

Novel Treatment of Ileus.—In one of the recent foreign exchanges, Dr. Maydieu states that he has for many years treated cases of ileus by the methods usually adopted, and has always failed. In recent years he has used, in twelve cases, heavy substances administered by the mouth. Instead of bullets, or mercury, Dr. Maydieu uses No. 5 shot. Several ounces of shot, after being repeatedly washed, are carefully mixed with about one-half the same number of ounces of oil. Of this mixture, the patient is ordered to take a dessert-spoonful every half hour. Usually the vomiting ceases in a few hours, and the contents of the bowel are freely evacuated. NOTE.—A paragraph, in this connection, is being generally published; it is to this effect: a traveler being taken violently ill with an attack of ileus, his landlady prescribed for him a bullet, carefully anointed with olive-oil. Becoming skeptical as to the success of the remedy used, he expressed his doubts to his faithful practitioner. "Oh!" she exclaimed, with great enthusiasm, "my friend, you need not have the least doubt, that same bullet has passed through me at least seven times."

Many will recollect the anecdote, told so often by Dr. Chapman, in regard to himself, when called to visit a little boy who had swallowed a silver twenty-five-cent piece. "Madam," said the renowned joker, in all solemnity, "was the the piece good?" "Indeed it was, sir," replied the surprised but excited lady. "I got it myself from the mint." "Then, my dear madam," said Dr. Chapman, "if the money was good, give yourself no further uneasiness, for *it will certainly pass.*"

Treatment of Varicose Veins.—The *London Lancet* publishes some interesting experiments, made by Dr. Minkewitsch, with the object of determining the truth or falsity of the present views in regard to the danger of treating varicose veins by section.

This operation, which is still held by some surgeons to be fraught with danger, though it is almost daily practiced apparently with impunity by others, has lately been made the subject of experimental inquiry on animals by Dr. Minkewitsch. His object was chiefly to ascertain whether, when a portion of vein had been absolutely excised, it underwent regeneration. He freely exposed the jugular or femoral veins in dogs, sometimes operating on several in the same animal, occluded them with two iron-wire ligatures at a distance of half an inch or so, and excised the intermediate portion. The ligatures, in some instances, healed up with the wound; while in others they were thrown off with suppuration. None of the dogs died, giving tolerably strong evidence of the little danger that attends surgical interference in healthy veins; but after the lapse of a variable space of time, extending in one instance to three years, they were killed. The result of the post-mortem examination has convinced M. Minkewitsch that, in opposition to the statements made by Von Langenbeck and Velpeau, regeneration of an excised portion of vein never occurs. In all instances the circulation was effected through collateral and widely-dilated venous channels. Some of them were so distended and large, and withal occupied a position in such close contiguity to the excised vein, that the author thinks a mistake might easily arise. In all his cases, however, the two cæcal extremities of the injured vein could be demonstrated, and between these two nothing in the form of a canal was perceptible.

Thoracentesis.—In the *British Medical Journal*, Dr. Berkeley Hill has published a valuable paper on this subject. He directs attention to the following important points:

Mr. Berkeley Hill thinks this operative procedure for the cure of pleuritic effusion has not received sufficient attention. In an article in the *British Medical Journal* he states that the following points demand consideration (quoted in the *Medical Archives.*)

1. The removal of fluid from the pleura need hardly ever cause much danger or suffering. 2. Whenever effusion is copious, it is prudent to withdraw it to relieve dyspnœa and ward off a sudden fatal termination. 3. The usual mode of leaving chronic effusions to natural resorption may be advantageously replaced by tapping whenever the condition of the patient is stationary, and the pyrexia abated; the longer the fluid has existed the more urgent becomes the need of tapping, to enable the lung to expand before it has lost its power of doing so. 4. After tapping serous effusions the

wound should always be closed, at least until repetition of the evacuations had shown that cure would not be so effected; then, to tapping, injection of iodine or other irritants should be added, but in these cases the admission of air should be scrupulously avoided. 5. Where the fluid is purulent, the admission of air is immaterial, provided a free and continuous exit is maintained for the pus; and this free drainage is a cardinal point in the cure. One case illustrates the benefit from continued drainage by a tube passed across the chest through two openings; the second, the benefit which even cases of long standing empyema, where the cavity will not contract, may obtain from frequent washing out with water or other injections. The third showed how readily a serous effusion may be absorbed, even during the progress of rapid pulmonary phthisis, and in this case evacuation gave temporary relief of a considerable amount, though it did not cure the effusion.

Tapping the Pericardium.—Dobel, of Vienna, has recently performed this operation with immediate success; that is, the patient was promptly relieved of all of the most distressing symptoms, though the operation had to be repeated and the patient being old and exhausted, succumbed from an inter-current, or secondary disease.

Treatment of Incontinence of Urine.—This important subject is so well treated by Dr. Corrigan, in the *Dublin Quarterly*, that the reader will prefer reading his own statement of it:

I presume only to offer in this short paper a contribution to our list of adjuvants in the treatment of incontinence of urine during sleep, in childhood and youth. In the list of maladies not fatal there is, perhaps, not another so productive of misery and anguish as this affliction.

The child of five years of age feels acutely his misfortune when he involuntarily wets his bed, and fears to meet his nurse in the morning with his face of shame.

The school-boy who is subject to it carries about with him through his day of study and recreation a load of misery.

The climax, however, of anguish is, when the boy, grown into the young man, enters civil life, college, or the army, and dreads with fear and horror the discovery of his misfortune, though in no way his fault.

To such a degree has this terror risen that it has been sufficient to deter a young man from persevering in a course of life that otherwise presented all that he could desire.

The treatment of this affection may be divided into two heads: the first the constitutional treatment, being that conducted on the principle of strengthening the whole system, in the hope of including in it the erring organ: the second that of dealing directly with the organ in fault.

With the first, or that of constitutional treatment, I do not treat at all in the present paper.

The second head of treatment, or that of dealing with the organ at fault, has two subdivisions. The first having reference to medicines supposed to exert a specific action on the bladder, such as blisters, belladonna, copaiba, and to preparations of iron acting with double effect, local and constitutional; and the second, relating altogether to mechanical means of treatment, all difficult or impossible to carry out. It is with this last I now propose to deal.

Various mechanical means of treatment have been recommended, for instance, a perineal truss. It is scarcely necessary to observe that its application is attended with insurmountable difficulties, the impossibility of exactly adjusting its pressure, its interference with rest, and the exposure attendant on using it.

Another means has been proposed, and it is said in some cases successfully used, of applying along the urethra on the outside and under-surface of the penis a portion of bougie, which is kept in its place by bands of adhesive plaster applied around the penis, with sufficient pressure to prevent the urine forcing its way along the urethra.

It is scarcely necessary to observe that the use of such mechanism is utterly impracticable in nearly all cases of this miserable affliction in childhood, and early manhood.

The young sufferer naturally turns to the use of mechanical means for relief, and we have on record instances in which the poor child, under terror of shame and discovery, has tied a ligature of cord around the penis, and under the influence of the same feelings has concealed his sufferings until gangrene has set in; and Gross relates a case in which a brass curtain ring was used, which became imbedded in the inflamed corpora cavernosa, along with a calculus lying in a pouch behind it.

Long time since I tried to close the opening of the prepuce with adhesive plaster or court plaster, and in one case, that of a young man of twenty years of age, who had entered the army, and who was intelligent and careful, the result was favorable, but there were great difficulties about it. The application took time, and could not be carried into successful effect with boys and children.

The mechanical treatment to which I now wish to draw attention, is the treatment by collodion. It is most easy of application, occupies scarcely a minute, and can be carried out at school, college, or elsewhere, in perfect privacy.

All that is necessary is, while the prepuce slightly curved up is held with the left hand, to smear over the little cup thus formed by the extremity of the prepuce with collodion by means of a small camel's hair pencil, or the blunt end of a penholder. Almost as fast as applied the collodion solidifies. In contracting it draws closely together the edges of the prepuce, and thus the exit for the escaping urine is closed.

A boy of eleven years of age has, after one lesson, been able to use the collodion, and has used it every night carefully and diligently, so anxious has he been to cure himself of what he considered a disgrace. A fortnight's use is sometimes sufficient for the cure. A relapse is easily dealt with. A solution of gutta-percha in chloroform would seem at first sight to be equally applicable, but it is not. The solution of gutta-percha is much longer in hardening, and it possesses no contractile powers.

When the child or youth desires to pass water the little wedge or cap of collodion is easily removed with the finger nail.

When I first used this collodion application, my expectation was, that the bladder would act so forcibly against it as to cause sudden pain, and oblige the patient to jump at once out of bed and quickly remove the collodion, and that he should then repeat the application before returning to sleep.

I was agreeably disappointed. There was no pain; no awaking; but on rising in the morning the prepuce was found slightly distended with urine, and the collodion was removed without difficulty.

It may be presumption, but I can not conclude without expressing a strong opinion against one part of the management of these cases, which is very frequently practiced through the best motives on the part of mothers and nurses, and sanctioned by the recommendations of some medical authorities—the practice of awaking the child at stated intervals to pass urine.

I have never seen any benefit whatever from it, and I think I have, on the contrary, always seen aggravation of the affection from it, not unreasonably to be explained, on the principle that such practice is really training the bladder to empty itself at stated periods, when the object is that it should be trained to retain its contents.

Petroleum as an Antiseptic in Surgical Diseases.—S. Fayrer, M. D., C. S. J., professor of surgery in the medical college, Bengal, states, in the *Edinburgh Medical Journal* for December, 1869, p. 493, that he has recently been using petroleum as an external application, on the antiseptic principle, with treatment of certain surgical cases. He thinks his cases warrant the conclusion that it possesses some, if not all of the advantages assigned to carbolic acid for this purpose.

Our author has used it undiluted or diluted with equal parts of oil or glycerine, and while it certainly has some deodorizing power, it appears also to have that of limiting suppuration, and of restraining the development of septic miasmata in the discharges, whose decomposition it probably retards. It is also useful as a stimulating and detergent application in sloughing and ulcerating surfaces. And he has remarked especially, in one case of carbuncle, that it proves most efficacious as an external application. It is not irritating to raw surfaces, or very slightly so, and he has not heard any complaint made, beyond that of slight smarting, when it is applied to granulating and ulcerating wounds. The evidence of its virtue is, as yet, but limited, but it is such as to suggest the advantage of making further trial of what may prove to be a valuable addition to our surgical resources, and is one that has the advantage of being produced in the country. Twenty cases of ulcers and wounds tested in this manner, with good result, are recorded.

Treatment of Intussusception by Inflation.—Dr. Wilks, of Guy's Hospital, says on this subject, in the *Lancet*, May 21, 1870:

Cases of relief in intussusception of the bowel by inflation deserve to be recorded, and the first of the two following cases is a good example of this method of treatment. Dr. Brinton, in his posthumous work on Intestinal Obstructions, has referred to it in the following terms: "There are certainly instances on record in which an obstruction having every symptom of an intussusception has been suddenly removed by an inflation of the patient's rectum with a pair of bellows, the relief having instantaneously followed that severe pain which complete distension brings about." It is probable that, especially in cases where the intussusception is of the large intestines, this method of relief might be more generally employed than it seems to be at the present time. Our notes of this case are derived from the report by Mr. Wm. Stanger.

William S——, aged six months, admitted into clinical ward on the 28th of March, 1870. The child appeared in perfect health until yesterday afternoon about four o'clock, when, whilst sucking a crust of bread, he suddenly screamed out, fainted and became cold. The mother took him to a doctor who gave him a powder which made him very sick. He continued in great pain and cried incessantly. At three o'clock this morning he passed a quantity of clotted blood per rectum, and this continued to run from him until he was admitted to the hospital at twelve o'clock. The last fæcal evacuation took place about noon the previous day.

On admission the child was seen to be well grown, but face pale and had a generally collapsed appearance. On examining his abdomen a lump was distinctly felt to the left and above the umbilicus, which hardened when pressed upon. On passing the finger up the rectum a round projection could be felt about four inches up, with a circular orifice in the center. The finger, when withdrawn, was covered with blood. The case being thus clearly one of intussusception, Dr. Wilks ordered inflation of the bowel by means of a bellows. Chloroform was given, and an enema tube passed into the rectum, the other end being attached to the bellows. The attempt to inflate was at first unsuccessful, owing to the large size of the rectum; but by increasing the width of the tube by wrapping a strip of lint round it, the colon was well inflated, and then the lump gradually went back until it quite disappeared. A drop of opium was ordered in a drachm of dill water, and the breast to be given sparingly.

On the following day, March 29th, no lump could be felt. The child had been sick several times, and nothing had passed per rectum. To repeat the medicine.

March 30th.—Child very irritable; apparently much tenderness over abdomen, especially toward the right side. Occasionally sick. Passed a little blood but no fæces.

31st.—Evidently better. Had a liquid evacuation with no blood, and sucks well.

April 1st.—Passed a natural motion, and altogether better.

2nd.—Child apparently well, and taken out by the mother, who was somewhat discontented at the operation performed on him, as she never could be made to realize the severity of the case.

He remained well until the 10th, when he was brought to the hospital, having had fresh bleeding, and the lump could again be felt. The mother would not allow the child to be again taken in for the purpose of a renewal of the method which had been before so successful, but took him away for the purpose of procuring some physic for him; and no more was heard of the case.

Dr. Wilks remarked that this was a good model case of intussusception and of the appropriate treatment. The nature of the involution was of the usual kind—the ileum into the cæcum, and the subject a boy, as is most commonly the case.

There was, however, one symptom which had not been hitherto remarked, viz: the collapse at the time of the occurrence of the passing in of the bowel. The sickness and constipation denoted intestinal obstruction, and the passage of the blood that this was caused by intussusception. This symptom was first clearly established as a characteristic sign of this accident by Mr. Gorham, who wrote an excellent article on the subject in the Guy's Hospital reports for the year 1838. If there had been any doubt as to the nature of the case, this would have been removed by the discovery of a tumor in the abdomen, which contracted on being handled, and by the fact of the rosebud-like projection to be felt in the rectum. This showed that the intussusception was very extensive. The treatment was then clear, and, as in other cases, was completely successful. Dr. Wilks was to keep the child in for some time, continue the opium, and feed him most sparingly. It was also discussed whether a pad over the abdomen might be efficient in preventing a return of the intussusception.

CLINICAL RECORDS.

"Ex principiis nascitur probabilitas: ex factis, vero veritas."

LESSONS FROM THE MEDICAL CLINIC AT THE "HOSPITAL DE LA CHARITE," GIVEN BY S. JACCOUD, Assistant Professor to the Faculty of Medicine at Paris, Physician to the Hospital St. Louis; Chevalier of the Legion of Honor; Corresponding member of the Royal Academy of Science of Lisbon, and of the Medical Societies of Berlin, Vienna, Würzburg, etc. Containing 29 Wood-cuts and 11 Chromo-lithographs.

[Translated by Dr. J. D. JACKSON, of Danville, Ky.]

History of a Patient with Subacute Rheumatism and Endo-pericarditis—Alkaline Medication in Rheumatism—Commencement and Symptoms of Pericarditis—Dry Pericarditis—Tactile and Stethoscopic Signs—The Characteristics of Pericardial Friction—Distinction between Frictions and Souffles—The Diverse Varieties of the *bruit de galop*—Their Semiological Value—Pericardial Friction in Cholera Patients.

Pericarditis with Effusion—Results of Percussion—Causes of Error—Lack of Constant Relationship between the Extent of the Dullness and the Quantity of Liquid Effused—Other Symptoms of Effusion—Graphic Characters of Pulse.

Paralytic Form—Its Causes, Symptoms and Treatment.

Adhesion of the Pericardium to the Heart, or Cardiac Symphysis.

Gentlemen: The young man, twenty-eight years old, who occupies No. 13 of Saint Charles' Ward, is a stout young fellow, who came in some days ago, complaining of articular pains. The symptoms of the disease declared themselves about three weeks ago; but it was not until the third week of its course, that the pains became sufficiently severe to render working and walking impossible. When we saw this patient, the large articulations of the limbs were affected, though but moderately so; pressure over the knees, shoulders and elbows, was painful; but the joints were not swollen, and the pains spontaneously originating, were very bearable; but the vertebral articulations were much more affected, and this is a very rare localization in rheumatismal disease. These spinal pains, even when they are moderate, add much to the discomfort of the patients, because of the immobility almost, to which they condemn them. In conclusion, the young man has never had fever, either of a morning or evening, and excepting a little diminution of appetite, presented no notable alteration of his health; the heart, on being examined carefully, was found perfectly intact. We have, then, a subacute articular rheumatism, of a very mild type, developed in an individual who had never before suffered pains of this kind, and was not subject to any hereditary influence. I have, in this case, instituted the alkaline treatment, in large doses; the first day the patient took 20 grammes of bicarbonate of soda in a pint of the tea of *dog's-grass* (triticum repens); dating from the third day, the quantity of the salt was increased to 25 grammes, a dose which has not been gone beyond.

This medication has certainly been useful, especially in view of the cardiac accidents, of which I shall soon speak to you; but I have established, in this case, still another fact, which I have already many times observed, namely, that this treatment has succeeded much better in the febrile forms of rheumatism; there is then obtained a prompt checking of the febrile movement, and a salutary sedation of the painful phenomena; so that, although the total duration of the disease may be but slightly, or not at all, diminished. This treatment is none the less of real utility, since without any inconvenience attached to its use, it fills a most pressing indication, which is to calm the sometimes almost horrible sufferings of patients. However, these effects of the alkaline treatment of rheumatism, to which I called attention four years ago,[*] and which I have often observed since then, are much less marked in non-febrile rheumatism.

The mitigation of the pain is less rapid, sometimes indeed it is only obtained after a delay which does not permit us to perceive any therapeutic influence; there is a disgust and nausea, so that it is with very great difficulty that you can induce acceptance for seven or eight days of an alkaline solution, whilst it is very well taken and very well tolerated by those suffering from febrile rheumatism. Do not infer from my words, gentlemen, that this treatment is then useless; whatever may be its sedative effect upon the fever and pain, it prevents, in a certain measure, the cardiac determinations, at least this is the result of the statistical tables of Garrod and of Dickinson; I will add, that under the influence of this medication instituted from the beginning, the complications on the part of the heart have to me appeared always to be considerably diminished. The antiplastic properties of the alkalies render very explicable this special action.

Our rheumatismal patient was for four days in our service, and his condition was improving, when, on the fifth day, in the morning, we, for the first time, found him with fever; the pain, however, had not become any more intense, and no articulation was affected until evening; this fever suddenly lighted up, denoted then very surely some visceral complication. Directing my researches in accordance with the relative frequency of rheumatismal determinations, I at once examined the heart; the volume of the organ was not augmented, the beatings were frequent and strong, without irregularity, the apex recoiled clearly beneath the exploring finger; the second normal tone was perceptible, with all its physiological characters, but the first was, as it were, veiled by a systolic souffle, without harshness; the abnormal bruit was equally well distributed from apex to base, and it propagated itself into the vessels of the neck. It was then that

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[*] Jaccoud. *Traitement du rheumatisme articulaire aigu par les alcalines à haute dose.*—*Gazette Hibdomadaire*, 1862.

I obtained the benefit of the care with which I had every morning examined the heart of this patient; if I had not taken this previous care, I should have been compelled to hesitate in the interpretation of these phenomena; by reason of the timbre, the seat and propagation of the souffle, I would have been compelled to take into consideration the possibility of a simple anæmic souffle; but I knew that on the evening before, this abnormal bruit was not present, I knew besides, that any spoliative treatment had never been made use of, consequently, I was certain from the beginning, that this symptom was *new*, and the signification in this case was positive: we were in the presence of a commencing endocarditis. This phlegmasia was for the moment very light, for its only effect was, to provoke a little fever; there were no palpitations, or irregularities in the rhythm of the heart, anxiety and thoracic oppression failed, and in brief, the subjective symptoms were defective. Under such a condition as this, there was no reason for a more energetic therapeutic intervention, and I was content to continue the administration of the alkalies.

On the next day the state of the patient was less satisfactory; the fever gained in intensity, causing the pulse to beat 120 to the minute; the patient suffered a painful sensation of fullness in the chest; he had had some palpitations during the night. The souffle was stronger than on the day preceding, and it was localized; in the evening it had the same intensity over the whole præcordial region; now one could hear it very well throughout all its extent, but it presented a maximum most marked, on a level with the aortic orifice. In addition, on ausculting attentively the region of the base, I perceived a new phenomenon; this was an alteration in the rhythm, and in the number of bruits of the heart; the souffle taking the place of the first normal clapping, and the second bruit not being modified, I ought to hear but two bruits: the souffle first, then the sigmoid clapping, separated by the *petit silence;* in place of that I perceive three bruits, differing all three, by their qualities; there was first the souffle, then in place of the *petit silence* a feeble and, as it were, far off friction sound, brusquely terminated by the second normal clapping. In point of their respective durations, these three bruits can be represented by a brief between two long dashes —◡—; the complex bruit which results from the succession of these three elements, very exactly recalls to the ear the rhythmical sound of the gallop of a horse, and hence the name of *bruit de galop*, under which this phenomenon is known; from this new symptom, the semiological value of which is more precise, I have announced the invasion of a pericarditis, and I have had applied eight wet-cups over the region of the heart, the alkaline medication being continued as heretofore.

The day following the patient found himself better. The fever was a little less high, and the local phenomena, more marked, were of such a nature as to remove all doubts remaining in the minds of any among you; the endocardiac souffle was the same, but in place of the far off friction sound, difficultly perceptible, one could hear at the base of the heart a rude friction, most plainly manifest, a certain sign of the presence of a recent exudation upon the laminæ of the extra-cardiac serous membrane. The diagnosis of endopericarditis was by this justified. The phlegmasia of the pericardium was dry, without a trace of liquid effusion. Taking into view the more marked symptoms of the patient, without occupying myself otherwise about the increase of the morbid sounds, I did not make any new draught of blood; on the other side, the very limited localization of the frictions showed that the phlegmasial exudation was slight, consequently there was no indication for calomel in broken doses; the accidents being all recent, and the liquid effusion nil, there was no plausible reason in favor of vesicatories; finally, the heart's beatings being of a proper energy and regularity, there was no indication for digitalis; I have obeyed these negative indications, and continued the bicarbonate of soda.

Eight days later and our young man was cured of his articular pains and cardiac accidents, but he retained of these last an indelible trace. A week has passed by since the cure can be considered as complete, the boy leaves the hospital to-morrow, and you can demonstrate the persistence of his *bruit de galop*, and a slight systolic souffle at a level with the origin of the aorta. The first of these phenomena has no importance relative to the future, but the second is a source of danger, the consummation of which, though it may be far off, is none the less certain. Never forget in practice that rheumatism, in every case, bears a double prognosis: the one relates to the cure of the actual articular malady, the other embraces the ulterior destiny of the individual; every time that the endocardium has been touched the prognosis, with reference to the distant future, ought to be serious, because the restitution *ad integrum* of the orifices and valves, is positively rare; the patient thus derives from his rheumatism all that which is necessary to constitute a valvular lesion; let there then come an occasional cause, or simply the natural involution of the tissues, organic disease of the heart, manifests itself with all its fatal consequences.

This peculiar reserve in prognosis is not the only lesson you ought to draw from the history of this patient; it is proper to retain two other facts equally important: on the one part, the possibility of cardiac determinations in the course of sub-acute and very benign articular rheumatism; on the other the insidious and obscure début of pericarditis.

It is an error contemporaneous with Corvisart, that of regarding pericarditis as a disease announcing itself with noisy steps, bursting forth always with a crash; the descriptions have been drawn according to these presumed characteristics, but they have their origin in the dramatic imagination of the author, rather than in a severe observation. Enter practice with such a presumption, await for those phenomena given as strikingly characteristic to usher in the appearance of a pericarditis, and nine times in ten you will overlook the disease, which silently and very quietly will kill your patient. It is a long time since Professor Bouillaud, in his memorable works, opposed this very accentuated symptomatology, but we can not too much insist upon the dangers of such an error; one phenomenon among others, ought to be particularly pointed out, this is the pain; the symptom of pain is foreign to inflammation of the pericardium, know this well; where it exists it is due to some complication on the part of the lung, or the pleura.

In fact, secondary pericarditis, which is the most frequent, generally develops itself in an obscure manner; its début is insidious and latent, and the only positive and constant signs of the disease are those which are furnished by auscultation. Hence the precept, which you ought never to reject: it is proper to auscult every day the heart of individuals affected with rheumatism, pneumonia, pleurisy, scarlatina, variola, and every disease in a word capable of complicating itself at a given time with pericardial inflammation. It is only thus that you can put yourselves beyond the danger of shameful surprises and painful disappointments.

Let us turn now to certain of the symptoms of pericarditis.

The classical division of acute pericarditis into dry pericarditis and pericarditis with effusion, seems to exhaust the subject, and to define clearly the clinical forms basing them on pathological anatomy; nevertheless, I think it useful to add to those two forms a third, although it may be almost consecutive to one of the two others, in order the better to impress your minds with a group of phenomena, which carry all the danger of the malady; this would be the paralytic form, characterized by the disorder and powerlessness of the cardiac muscles. These three forms often succeed each other in the same individual, it is thus ordinarily that things happen in mortal cases, but they can exist isolatedly, and it behooves us to rigorously appreciate certain diagnostic signs.

Dry pericarditis, of which our patient has presented you an example, is often characterized by three orders of signs: febrile phenomena, tactile phenomena, and stethoscopic phenomena; but the symptoms of the two first groups can fail entirely, if the inflammation is light and limited at the time, the symptoms of auscultation are alone constant.

The tactile sensations perceived by the hand which explores the præcordial region are diverse; it is sometimes simply an unusual gentleness in the retreat of the apex after the systolic shock, it seems that the organ arriving in contact with the thoracic wall adheres there an instant, because it encounters an agglutinative surface instead of the smooth and polished surface of the sound state; the apex detaches itself badly, it drags. This sign is often isolated, but if the exudation be a little abundant and solidified, the hand, applied flatways, perceives besides a more or less extensive friction; the absence of the vibratory character generally permits the distinction of this friction from the purring, quivering, eminently vibratory sound which is observed in certain valvular lesions. Oftentimes, also, the heart's impulse is exaggerated, and the loudest bruits customarily have an almost metallic timbre.

But the pathognomonic sign is furnished by auscultation, this is the bruit of friction; it results from the rhythmical movement which takes place between the two folds of the pericardium; silent in the sound state, because the rubbing surfaces are smooth and united, this movement becomes noisy when the inflammatory deposits, semi-solid or solid, cover those surfaces with asperities and salient rugosities. The signification of this bruit is absolute, wherever it may exist, it reveals a recently existing or an ancient pericarditis; the difficulty is not then in interpretation, it rests entirely in the establishment of the phenomenon. The pericardiac friction bruit is a bruit of attrition, of rolling, of crackling, which one spontaneously compares to the sound of new leather or parchment; but this comparison, mark you, is not just excepting for large frictions, which one recognizes at once, and which besides are very rare; often, there is a thin friction sound analogous to that from silk-paper and if you wish a comparison, to sum it up in a word, I would say that the most faithful is this: the friction resembles the sound produced by the guttural and inarticulate expiration of the letters *krr;* cause the force of expiration, and the number of *r's* to vary, and you can imitate faithfully all the shades of pericardial friction sound, from the silk paper up to new leather. Now the endocardial souffle of the non-rasping kind, always recalls the bruit produced by the whispered emission of the dipthong *ou*, this souffle being besides a *bruit file*, uniform and sounded, while the friction sound is an unequal and broad bruit, it is always easy to distinguish this last sound of the non-rasping souffle, in taking solely into consideration the proper character of the two phenomena.

But, under other circumstances, the endocardial souffle presents such a rasping timbre that the intrinsic characters of the bruit do not suffice to distinguish it; it is then necessary to have recourse to other elements; they are furnished by the seat, by the time, by the propagation, by the persistence, and by the artificial modifications of the bruits. However extensive may be the sphere of a souffle, there is always a point where it presents a maximum of intensity, and this point always corresponds to one of the four foci of auscultation of the heart; the friction sound is sometimes very limited, and the point where one hears it, does not correspond to any of the cardiac orifices; when the sound is more extended it can be very well perceived with a variable intensity in the divers points which it occupies, since this intensity is solely dependent upon the state of the false membranes, but there is no constant connection between these *maxima* points and the points of election of the souffles. Far from that this is in general on a level with the middle portion of the heart, there, where the antero-posterior diameter of the organ is the most marked, that the frictions are perceived with the most clearness: this is then on a level with the third intercostal space of each side of the sternum. So for the souffles, we have a constant and exact connection of maximum intensity with the orifices of the heart; for the friction sounds, any connection of this kind is generally seated in the middle region of the heart.

As to time, the souffle is, in general, frankly systolic or diastolic, and if it is double, it reproduces to the ear the rhythm of the heart's bruits, separated by the *petit silence*; the friction is much more irregular, coinciding with one of the bruits of the heart, it surpasses it in duration, or rather, commencing before or after the bruit, it terminates with it; or rather still, it only occupies the *petit silence*. The systolic friction, for reasons easy to conceive, is much more frequent than the diastolic friction. This capricious irregularity of the pericardial bruits is one of the best characteristics; it will not astonish you if you will think of it, that the normal sounds of the heart do not occupy all the duration of the motor-phases, and that the friction sounds are not allied to the duration of these bruits, but to the changes of form of the heart during the divers periods of its revolution.

The souffle propagates itself to a distance, following well determined directions, and to be distinguished as souffles at the apex, and those of the base. The friction is not propagated, it vanishes where it is originated; when it is very limited it suffices to remove the stethoscope to a distance equal to the diameter of the instrument, to no longer find a trace of the friction which was so well heard at the first point. Doubtless, if the physical cause of the friction occupies a great part of the pericardium, the bruit will be heard in a sphere no less great, but it is not propagated, it is produced directly in all the points where it is heard. It is because of not having kept an account of this distinction, that Graves committed the error of attributing to the friction the same propagation as the souffles.

The pericardial frictions can vary, from one day to another, in intensity and extent, and this mutation contrasts with the persistence of the rasping souffles.

The friction augments in force beneath the ear, if while one auscults, he will increase the pressure of the stethoscope. I have verified this phenomenon for you, in the patient who has been the subject of this lecture, and in that woman whom we observed for some time in Saint Anne's ward; I have never myself seen it fail, and in doubtful cases, it can be really useful. We may find still another mode of modifying, artificially, the intensity of the friction; after having ausculted the patient in the dorsal decubitus, we cause him to sit up, inclining the trunk forward, and recommence the auscultation; then generally it is observed that the bruit has much more force. Now, any of these processes does not modify the intensity of the souffles; it results, on the contrary, from the researches of Sidney Ringer, that the souffles are louder and more rude than in the horizontal position.

A last characteristic may be pointed out which, however, is of no value if the souffle is very rasping and strong, the friction is more superficial than the souffle, and the ear appreciates very well this difference in distance of the source of the bruits; but there are such strong, such noisy souffles, that they are perceived immediately beneath the ear, just as the pericardial frictions, so that this characteristic is of no utility, excepting in a case where the souffle presents a medium intensity.

These are the differential signs of friction and souffle; in certain cases the distinction is more simple, in others it is only by the entire union of these characteristics that you can form your judgment.

What I said to you an instant ago, concerning the rhythmical irregularity of pericardial friction will cause you to easily comprehend the formation of the *bruit de galop;* that it is a friction which does not exactly coincide with the normal sounds of the heart, which adds itself, and by consequence increases to three, the total number of bruits. Since besides this, the diastolic friction is very rare, the additional bruit is generally constituted by a systolic friction which surpasses the duration of the first normal clapping, and encroaches upon the *petit silence.* In all cases of this kind, and this is what has happened in our patient, the triple bruit is thus created; first bruit, this is the first normal tone or a souffle; second bruit, this is the post-systolic friction sound, which occupies the *petit silence*; third bruit, this is the second normal tone; the duration of the additional bruit is measured by that of the *petit silence*, and as this last is the shortest time of the sonorous measure of the heart, the rhythm of the triple bruit is necessarily figured by a brief between two long strokes, this is the *bruit de galop* par excellence. When it presents this union of characters, the *bruit de galop* is pathognomonic, it denotes the existence of pericardial false membranes, old or recent.

But, gentlemen, the triple rhythm of the heart sounds is observed under other conditions, and we encounter here a semiological question of great importance. In fact, there are three species of the *bruit de galop*, and each of these has a distinct signification. The first is that which we have been studying; constituted by a pericardial friction, added to two normal or abnormal bruits of the heart, it is the positive sign of a pericarditis, which I will no longer insist upon.

The second variety of *bruit de galop* results from the doubling of one of the normal clappings; in the immense majority of cases, this doubling affects the second sound, so that the triple sound is thus composed: first sound normal, *petit silence*, two-seconds bruits. Two differential characteristics distinguish this *bruit de galop* from the first: at the commencement, the preservation of the *petit silence*, then the quality of the additional bruit; this is a solid tone, a clapping in all respects like the physiological clapping. So, the first *bruit de galop* is due to the addition of a friction sound, the second is due to the addition of a bruit of sudden percussion from a clapping. Although constant and persistent, the *bruit de galop* of the second variety may be a sign of mitral insufficiency.* In cases still more rare, concerning the value of which opinion is not yet well fixed, the doubling appertains to the first bruit: here the similitude is more allied to the pericardial *bruit de galop* because the *petit silence* can be annihilated by the additional bruit, but the distinction will nevertheless be made, if one has regard to the quality of the bruit; there are three bruits of the same timbre which are heard, three bruits of percussion, three clappings, and the absence of friction interposes, to put away from us the idea of the pericardial gallop.

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*See, in the sixth lecture, an interpretation of this phenomenon.

The third species of *bruit de galop* is much more rare; it is also produced by a double diastolic bruit, but the superadded bruit does not come from the doubling of the second normal clapping, it results from the abnormal shock of the heart against the thoracic wall at the moment of diastole. This phenomenon, which has often been confounded with a doubling of the second bruit, coincides generally with another symptom equally abnormal, to-wit: the sudden depression of the præcordial region at the moment of systole; it is by this symptom, that the true signification of the triple bruit is recognized, and the error avoided of attributing it to a doubling of the second clapping. In this particular case, the relation of the visible movements and the bruits is thus constituted: systolic depression, first bruit normal and *petit silence*,—prominent diastole, second bruit normal, a double second sound resulting from the diastolic shock; this additional bruit encroaches more or less upon the *grand silence.* This variety of *bruit de galop* appertains not to pericarditis, but to one of its sequelæ, general adhesion of the pericardium. Two recent autopsies of Friedreich justify this proposition in semiology, which that observer has very clearly demonstrated.*

Such is the semiology of the *bruit de galop;* all these details are indispensable, for it is by this alone that each of the varieties of symptom has a clear and precise signification, it is essential to be able to recognize and distinguish them, and for this, there is no other means, than that of being completely informed regarding their mode of production, and the delicate shades of difference characterizing them.

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*Friedreich. Zur Diagnose der Herzbeutelverwachsungen (Virchow's, XIX, 1864).

As to the distinction between pericardial and pleural frictions, it is more simple: the first are isochronous with the revolutions of the heart, the second are isochronous with the respiratory movements; besides, if there remains any doubt on the subject of the bruit perceived, it suffices to clear it up, to suspend completely the respiration of the patient. The bruit then ceases if it is pleural, it persists if it has passed into the pericardium.

I have repeatedly told you that the pericardial friction is connected with the presence of an exudation into the pericardium; this is almost always true, and in ordinary bed-side practice, the truth of this proposition is absolute. But it is to-day proven, that in certain conditions where the pericardium presents an unusual dryness, the heart in the meanwhile preserving its proper energy, one may hear the friction sounds in the absence of all exudate. It is in choleraic cases, that this curious phenomenon has been observed. Pleischl in 1837 first pointed out the fact, bringing three autopsies to support it* and that same year Mettenheimer made a similar observation. This was also in a cholera patient; the pericardiac friction was so strong, and so clear, that he without hesitation diagnosticated a dry pericarditis, of which the autopsy exhibited no trace.†

In our patient we have observed, with the stethoscopic signs of dry pericarditis, a souffle in the first time, and you have seen, with me, according to this diagnosis, an endopericarditis. It is, indeed, the souffle properly so called, which is foreign to pericarditis; the souffle is always an intra-vascular phenomenon, and when one encounters it in the course of an inflammation of the pericardium, there are only two possible significations, concomitant endocarditis or anæmia.

There is generally a marked smallness and irregularity of pulse, as important symptoms of acute pericarditis; now these characteristics are not observed excepting in case of considerable effusion, and especially in the paralytic form, but in dry pericarditis or with moderate effusion, the regularity of pulse is the rule; only, the mode of ascension is sometimes modified; it assumes a peculiar abruptness which has been noted by Marey. But this character is not constant.

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* Pleischl. Prager Vierteljahrsschrift, XXIX, 1851.

† Mettenheimer. Ueber perikardiale Reibungsgeräusche ohne Perikarditis (Archiv für wissenchaftliche Heilk. II,1866).

Although dry pericarditis ought generally to be less grave than that which is accompanied by effusion, it ought not to be forgotten, that it can also conduct to the paralytic form, and to syncope, and thus become mortal.

Pericarditis with effusion, presents two different modes of dêbut. Sometimes we observe, during one or two days, the ordinary signs of the dry form, then these signs disappear gradually, in proportion as the effusion is produced; sometimes this last more precocious, commences almost with the disease, and the period of dryness very short or almost null, escapes observation. The first effect of the effusion of liquid is the modification of the dullness of the præcordial region, but it would be an error to think that there is always an exact relation between the extent of the dullness and the quantity of liquid. The interesting researches of Skoda and of Duchek,* have caused the recognition of two causes of error; and, first, the dullness can be more extensive than the effusion. In this case there are formed between the external surface of the pericardium and the lungs, adhesions which fix these last organs at a point of the chest more or less far removed from the sternum; it results from this fact, that the heart enters into immediate relation with the thoracic wall to a greater extent than in the normal state, and hence a proportional augmentation of the præcordial dullness, even in the absence of all effusion; for recognizing this condition and attributing it to its true cause of the dullness observed, there is but one means, it is necessary to measure, comparatively, the dullness at the end of inspiration and at the end of expiration.

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* Duchek. *Wiener Med. Wochenschrift*, 1859. *Die Krankheiten des Herzens*. Erlangen, 1862.

If the lungs are free, more completely covering the region of the heart at the end of inspiration, the dullness is less and it offers its maximum after a complete expiration. When the dullness remains the same during the two times of the respiration, it is because the lungs are fixed, in which case the dullness proves nothing for the marked pericardial effusion, it is necessary to take into consideration the other signs. This means is a very good one, unfortunately it is only accessible to virtuosos in percussion. It is still the eccentric displacement of the lungs, which causes the dullness of effusion to generally commence in the region of the base, toward the sternal extremity of the fourth costal cartilage. At this point, the anterior borders of the two lungs touch each other in the normal state, they mask by their sonority the subjacent dullness of the heart, and if they separate themselves ever so little, either because of pleuro-pericardiac adhesions, or because of an effusion, this dullness appears more strongly marked. The initial seat of the dullness has been very well indicated by Skoda and Zehetmayer* but it is not necessary for its explanation to suppose with them that the liquid effusion should accumulate at the base of the heart. The simple displacement of the normal connections of the organs, suffices to explain the fact.

The other cause of error is of the reverse character, the dullness perceived is much less extensive than the effusion. This fact, the causes of which have been very well investigated by Duchek, holds where there is either fixation of the lungs in their normal situation, or where there is an absence of pericardio-pleural adhesions; in the two cases, the heart takes what is called the profound position, the pressure of the effusion puts it in rear, toward the vertebral column, and owing to the presence of the lungs in front, the percussion of the præcordial region can give sensibly the same result as in the sound state, and yet still the liquid be in notable quantity. The same effects are produced if the anterior portions of the lungs are strongly emphysematous.

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* Zehetmayer. Die Herzkrankheiten. Wien: 1845.

These new contributions ought not to be forgotten; they permit the more exact appreciation of the semiological value of the præcordial dullness, and they bring us a fact, the practical importance of which is not doubtful, it is that there is no necessary relation between the extent of the dullness and the abundance of the effusion. If, then, with a slightly extended or even normal dullness, you observe, on the other hand, in your patient, the signs of an abundant effusion, do not rest in a false security based upon the result of percussion, and take for your guide other symptoms. These are, the disappearance of friction sounds with an aggravation of the state of the patient, the absence of cardiac shock to view and touch, the increased distance of the sounds of the heart to the ear, or complete silence, tumultuous palpitations, sometimes the undulating beating of Kreysig* and finally the oppression, the cough, and enfeeblement of pulse.

To these already characteristic phenomena, if there be ever so little or considerable effusion, we add a true dyspnœa resulting either from compression and atelectasis of the lungs, especially on the left side, or trouble in the cardio-pulmonic circulation. Then, also, but especially when there are sometimes certain cephalic symptoms, injection of the face and conjunctivæ, cephalalgia, agitation and somnolence; symptoms which are the effect of cerebral stasis, and insufficient æration of blood.

When the effusion is so very abundant as to hinder the contractility of the heart, the pulse loses all amplitude, and the sphygmographic tracing presents an aspect truly pathognomonic. The figure which I show you, is borrowed from Marey, it offers you a perfect type of this pulse, which I will volunteer to call the abortive pulse, *pouls avorta:*

Marey, Fig. 222.

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* Kreysig. Die Krankheiten des Herzens, etc., 1814–1817.

There are two other phenomena which have been observed in pericarditis with effusion, this is a dysphagia of a very marked character which is not due to any appreciable modification in the pharynx or larynx, and in which the carotid pulsations are like those of aortic insufficiency. The first symptom indicated by Testa, has been reviewed by Stokes.* As to the second, which was pointed out by that eminent observer, it does not appear to me probable that it depends upon pericarditis; the two patients upon which the phenomenon has been observed, had an endopericarditis, and the carotid pulsations were rather imputable to intra-vascular inflammation.

The failure and the insufficiency of the contractility of the heart, characterized the paralytic form, and make in it all the danger. Many causes can, combined or isolated, bring about this result: the mechanical compression from the effusion, the co-existence of a myocarditis, the acute fatty degeneration described by Virchow, and finally the simple paralysis of muscle without alteration of its substance, you observe in all conditions the effect of which is the same, that is the lessening of the contractile force of the organ. As to the clinical phenomena which reveal this state of danger, are they always identical? If the cardiac impulsion was still perceptible, it diminishes, and in the meantime the pulse becomes intermittent and irregular, the dyspnœa increases, there is venous stasis at the periphery, the jugulars are disturbed, the extremities become cold and sometimes infiltrated, there is the tendency to begining lipothymia and syncope. *Finally*, Stokes has pointed out another important sign, this is the progressive enfeeblement of the first beat of the heart, the second remaining nearly normal. This persistence of the second bruit, permits, in effect, the attributing of the enfeeblement of the first, to the exhausting of ventricular contraction, rather than to the presence of a considerable effusion.

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* Testa. Della malattia del cuore. Bologna: 1811. Stokes. The disease of the heart and the aorta. Dublin: 1854.

Most generally, consecutive to one of the two others, the paralytic form can, nevertheless, establish itself from the beginning; it is this which appears to have taken place very frequently in this pericarditis with sanguinolent effusion, observed in the course of scorbutus, in the north of Europe, and which has been described by Kyber, Sedlitz, and Karawajew. It is evident that there are general conditions in the individuals stricken, which bring into these cases premature powerlessness of the cardiac muscle.

The accidents of the paralytic form are extremely grave. Arrived at this point, the disease rarely remits. It is not the less necessary to hasten to fulfill the new indications furnished by this group of phenomena. It is necessary to recur to a tonic and stimulating medication, and sustain by wine, alcohol, quinia, and cutaneous revulsives, the failing energy of the heart.

This dangerous form, happily, is very rare, and, in reality, the gravity of the disease has been singularly exaggerated by Corvisart. He held it to be constantly, or almost constantly, mortal. Now, if we group the numbers given by Louis, Willigk, Bamberger, and Duchek, we arrive at a proportion of cases more satisfactory—61.5 to 100. But one can not hope for such a result except on condition of recognizing and treating the disease from its commencement; and do not forget that pericarditis does not reveal itself to the physician; it ought to be searched for.

Before terminating this conference, I desire to call your attention to two other patients who, without sign of actual pericarditis, both present one of the lesions consecutive to this malady, the general adhesion of the pericardium to the heart. One of these individuals is lying in St. Charles, Ward No. 19; he will soon occupy us more at length, for he is affected with anasarca and albuminuria; but I wish to occupy myself with him at this moment, to point out to you the state of his heart. This boy, who, although only nineteen years of age, has already had seven attacks of acute articular rheumatism, presents the clearest signs of a mitral and aortic insufficiency. At the base, at about a finger's breadth out from the left border of the sternum, in a very limited point, which I have marked with the crayon of nitrate of silver, there is heard a pericardial friction sound most plainly, this is like the crackling of hardened snow beneath the feet of a multitude. This friction is not perceived in any other place of the pericardial region; the heart is beside the seat of an enormous hypertrophy. It is then very certain that this young man has been anteriorly affected with a pericarditis, and it is none the less sure that this disease has left after it an adhesion of the serous membrane to the heart, a general adhesion save at the base, where is to be heard the friction. In effect, the præcordial region, or to speak better, all the anterior thoracic region, is agitated by an undulatory movement, which causes itself to be perceived much beyond the cardiac dullness; this movement has its maximum at the pit of the stomach. This phenomenon, well established with all its characters, especially in an individual whom one knows to have been affected with pericarditis, is a very good sign of adhesion of the pericardium to the heart. Already, in another instance, I have based upon this symptom: the diagnosis of a cardiac symphysis, and the autopsy fully justified me as right.* This sign has been indicated by Heim and Sauder, who have given it a very concise, but very exact formula; this is a perpetual epigastric undulatory movement.

The sphygmographic drawing taken from this patient, to tell the truth, does not present anything peculiar; the suddenness, the verticality and amplitude of ascension are evidently due to the hypertrophy and aortic insufficiency, and I can see nothing which can be attributed to the adhesion of the pericardium, unless it may be the inferior plateau of the second half of the tracing, and the defect in similitude of this second part with the first. This is a point which future observation can alone clear up.

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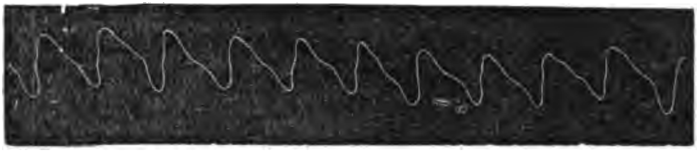
*Jaccoud. *Sur un cas de symphyse cardiaque, etc.* (*Gazette hebdomadaire*, 1861.)

Tracing No. 18.—Aortic insufficiency; adhesion of the pericardium.



It is generally said that the signs of cardiac symphysis are unfaithful, and that their multiplicity is an index of their slight value; all the signs given are not good, that is a fact, but in the number there are three excellent ones. These are, first, the epigastric undulation of Heim and Sander, such as our young man of No. 19 presents you. There is, secondly, the systolic depression, which you can observe in the patient in No. 10. There is observable at each ventricular systole, instead of a projection upward, from a limited upheaval of the thoracic wall, a depression of the pericardial region, especially manifest at a level with the apex.

This sign presents certain varieties according to the extent of the adhesion. When this only occupies the inferior half of the heart, the depression can be strictly limited to the intercostal space corresponding to the apex; if the symphysis is more general, there is observed at the moment of systole a retraction of the thoracic wall in the whole extent of the præcordial region; in fine, if the adhesion is equally established between the inferior face of the heart and the diaphragm, you will perceive, at the same moment, an evident depression of the epigastric hollow and the left hypochondrium. You easily comprehend that the adhesion of the pericardium to the heart is not sufficient for the production of this phenomenon, it is necessary, beyond this, that the pericardium should be adherent to the lung, and this to the thoracic wall; then alone can the depression and systolic retraction be visible exteriorly. The third sign, finally, is that which I have described to you in the course of this lecture; it generally coincides with the preceding, and consists in a prominence, a diastolic projection of the chest; this projection results from the elasticity of parts which, after the systolic retraction, assume suddenly their first situation. The recent observations of Friedreich, I have already told you, have established the fact that this projection can be accompanied by a bruit of percussion, the presence of which simulates a doubling of the second normal clapping. Pleuro-pericardiac adhesions are equally necessary for the manifestation of the phenomenon.

These three signs, the two first especially, have a certain value, since they present the precise characteristics which I have indicated to you. But if the existence of these signs reveals clearly the adhesion of the pericardium to the heart, their absence does not imply an entire absence of this lesion; it is necessary for these symptoms to be produced, that certain accessory conditions which are not always realized, and the symphysis although general, may be perfectly latent, as happened in a case which I observed many years since.* But this circumstance in no respect diminishes the semiological value of the phenomena which we have studied.

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

LEXINGTON, VA., October 21, 1870.

Dear Sir: We herewith transmit a brief account of the last illness of our illustrious chieftain, General R. E. Lee, together with a few preliminary remarks in regard to the state of his health, during the previous seven years.

During the trying campaign of 1863, General R. E. Lee contracted a severe laryngitis which culminated in pericardial inflammation of a rheumatic character. After his recovery, he could never exercise on foot, nor ride rapidly,

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*Jaccoud. *Note sur un cas de tuberculisation generalisee avec adherence totale du pericarde.* (*Bullet. de la Soc. anat.*, 1858.)

without some pain in the præcordial region, gradually extending over both sides of the chest, and attended with difficulty of respiration. This trouble, however, had gradually diminished, and we were not even made aware of its existence, until the fall of 1869, although, since 1865, we had occasionally prescribed for slight catarrhal or digestive derangements of a trivial character. He had occasionally suffered from subacute or chronic rheumatism, but very slightly until October 1869, when he had an attack of subacute pericarditis, with muscular rheumatism of the back and right side, and which afterward extended to his arms.

During his convalescence, some weeks subsequently, we discovered that he had pain in the præcordial region, during active exercise, and ascertained, for the first time, that such had been the case since 1863, to some extent. There was not during this attack, nor afterward, much febrile excitement—his pulse being rarely above 80, and never above 90—while both his respiration and rhythm of the heart, were normal. There existed at no time any evidence of effusion. He continued to improve, and was able to discharge his official duties, always arduous and often harassing, with scarcely a day's interruption. The variable weather of our winter prevented him from taking the regular exercise to which he was accustomed, and early in March he became more feeble, and his rheumatism more troublesome. His pulse was weak, but regular. The action of the heart lessened in force, but perfectly rhythmical. Evident sluggishness of the whole capillary circulation. He was habitually sad and depressed. During the latter part of the month, he was reluctantly persuaded to visit the South, and went as far as Florida, and, at our suggestion, consulted distinguished physicians in Richmond, Charleston, Savannah, and elsewhere. He returned, in May, very much improved. During the summer vacation, he spent a few weeks at the Hot Springs, in this State, where he received the valued attention of Professor Cabell. On his return to Lexington, he seemed very much improved—except that the flush on his face was too deep. He looked sad, wearied and depressed. However, he was entirely exempt from headache, vertigo, or any other cerebral trouble.

On the 28th of September, after a day of laborious duty at Washington College, he attended a meeting of the vestry of his church, and earnestly participated in the discussion of subjects in which he felt the deepest interest. Immediately on his return home, he was taken with an inability to speak, accompanied by impaired consciousness and a disposition to doze. Pulse, slightly accelerated and weak; respiration, easy; temperature of his head and skin, normal; pupils, natural; extremities, cool; face flushed, but not more so than was habitual. A careful examination over the heart revealed no morbid sounds, or alteration of rhythm. Regarding his case one of venous congestion induced by fatigue, sinapisms were ordered, and a hot foot-bath, with cold compresses to his head.

Soon afterward, while removing his clothes, his consciousness had so far improved that he assisted, and, pointing to his shoulder, said "You hurt my arm." * He was then placed in bed, and, having ascertained that he had a slight diarrhœa, and that his bowels had been freely moved that very day, no medicine was ordered.

September 29, 8½ A. M.—Passed a comfortable night. Pulse, 80 and soft. Respiration, 16. Temperature, normal; no unnatural heat about his head. Tongue, slightly furred. Consciousness, improved. Eyes, slightly suffused. Disposed to doze, but easily aroused, and responds intelligently "yes or no" to questions. Evidently understands whatever is said to him. Takes nourishment readily. Deglutition, easy. When frequently asked if his head ached, he replied, "No!" His symptoms indicating sluggish capillary circulation in the brain, a blister was applied behind each ear and to the back of his neck, and he took

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* He had rheumatism of the left shoulder joint.

℞.—Liq. ammoniæ acetatis ℥vi
Spts. æth. nitrici f℥ij
Potass. chlorat. ʒij.
M. S. tablespoonful every 3 hours.

The evening found him with no material change of condition, or symptoms. Ordered a purgative enema, which acted slightly. Diet—Mutton broth, tea and coffee; the latter as cerebral stimulants, which he takes with relish. He raises himself, with little or no assistance, to the sitting posture to take nourishment.

September 30, 9 A. M.—Passed a quiet night. Condition unaltered, except that his tongue is inclined to be dry, and, on that account, protruded less easily. Is quite conscious and observant, but averse to speaking, using preferably monosyllables.* Diet and medicine, continued.

5 P. M.—Evidence of commencing reaction. Pulse, 90 and full. Head, somewhat hot. Face, more suffused. Respiration, 18. Restless. Abstracted six or eight ounces of blood by cups to upper half of spine. Applied cold cloths to his head and a hot mustard pediluvium. Ordered ten grains of calomel at bed-time. In an hour, his pulse was reduced to 76, soft and compressible; skin, slightly perspiring; temperature, natural.

October 1, 7 A. M.—Took 3 drachms each of fluid ext. of senna and taraxacum. Still inclined to doze, but wakes up frequently, and is aroused by the slightest noise. Conscious and observant when awake, but disinclined to talk. Pulse, 80. Skin, slightly moist. Eyes and face, still suffused, but not more so than had been habitual for some months. No indication of paralysis. Tongue, a little dry, but not red. Ordered essence of beef and coffee every two hours.

5 P. M.—No alvine action. Administered a purgative enema. No effect. Gave

℞.—Hyd. chlorid. mit gr. 10.
Podophyllin. gr. ¼.
Ol. caryoph. gtt. ij. M.

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* This was his peculiarity when sick, at any time.

October 2.—No action of medicine. Gave

℞.—Ol. Ricini ℥i.

Symptoms unchanged. Diet, same.

5 P. M.—Medicine has acted well. Rather more conscious.

October 3, 9 A. M.—Rested well. Condition improved. Pulse, 80 and soft. Temperature, natural. Less drowsy. More intelligent and observant. Gave

℞.—Potass. Iodidi gr. 80.
Aq Menth. piperit. ℥viii.
M. S. tablespoonful t. d.

Added a little port wine to his other diet.

6 P. M.—No material change.

October 4, 9 A. M.—Passed a good night. Turns himself easily in bed, as he had done from the first. Micturition easy; tongue rather furred. Omitted the iodide and gave:

℞.—Hyd. chlorid. mit. 12 grs.
F. 6 powders.
S. One every 3 hours.

5 P. M.—Continued treatment.

October 5, 9 A. M.—General condition much the same, except that he seems slowly improving. Countenance brighter, face less suffused. Respiration, 16; temperature, natural. Treatment continued, and in addition ordered:

℞.—Magnesiæ Citrat. ℥ss.
To be repeated every 6 hours, if necessary.

6 P. M.—No change.

October 6, 9 A. M.—Tongue cleaning and moist; consciousness increased. Has been able since the 1st to speak some sentences, but rarely volunteers to do so. Suspended the mercury and gave:

℞.—Ol. Terebinth. f℥ss.
Cretæ Preparat. ʒi.
Pulv. G. Acaciæ ʒij.
Sacch. alb. ʒij.
Aq. Cinnamomi, ft. Emulsio ℥vj.
M. S. Tablespoonful every two hours.

6 P. M.—As the citrate had produced no effect, gave:

℞.—Ol. Ricini ƒss.

October 7.—Gradual improvement. Medicine acted once slightly. Eat 2 soft eggs and part of a broiled bird, with relish. Continued coffee, cream and wine. Ordered:

℞.—Elix. Pepsin, f℥vj.
Strychniæ Sulphat. gr. 1.
S. Teaspoonful t. d.

Eyelids being a little inflamed, applied a mild astringent ointment.

5 P. M.—Medicine acted freely; continued the turpentine and pepsin. Seems better; takes more notice, but speaks little.

October 8, 9 A. M.—Little or no material change; continue medicine and nutritious food.

5 P. M.—Same.

October 9.—Has had some little excitement for two or three days, towards evening. No alvine action. Omitted the turpentine and gave two grains of quinine at 11 A. M. and at 2 P. M.

5 P. M.—No action of bowels; gave 4 cathartic pills, of comp. extr. of colocynth, podophyllin and aloes, at bed time.

October 10, 9 A. M.—Seems much improved. In reply to a question he said, for the first time: "I feel better." Trying to rally him we spoke playfully of his horse needing exercise, and that we hoped he would soon be able to ride him. Turning his head he gazed earnestly at the speaker for a moment, then closed his eyes and shook his head.

12 M.—Had insisted on getting out of bed to the chair for the first time, and his attendants had yielded. He accomplished nothing, and was much exhausted. Pulse feeble and rapid; respiration hurried, etc. Ordered ten grains of carbonate of ammonia every two hours, to be alternated with brandy and essence of beef.

5 P. M.—Little or no change. Treatment continued during the night.

October 11.—Evidently sinking; less observant; pulse 120; very feeble; respiration hurried. Still recognized whoever approached him. Refuses to take anything unless presented by his physicians. It soon became evident from his rapid and feeble pulse, deepening unconsciousness and accelerated breathing, that his case was hopeless. Still the stimulants were perseveringly used up to daybreak, when he became unable to swallow. During the night he had a free action. From daylight his decline was rapid, but gentle. Soon after 9 o'clock A. M. he turned, with assistance, upon his right side, then closed his eyes and as tranquilly as the setting sun his noble spirit passed into the presence of his Maker.

Remarks.—We had long been painfully impressed with the conviction that depressing moral causes were slowly but steadily undermining General Lee's health in a ratio far exceeding the inroads of mere physical disease. Indeed, how could it be otherwise. The terrible strain upon him during the momentous campaigns of '63 and '64; the agony of mind endured at Appomattox; the wail that went up from widows and orphans all over the desolated and ruined South; the bankrupt condition of his native State; the mute and eloquent woe appealing to him on all sides, were enough, and more than enough, to bow his mighty spirit, and to crush out, with fatal tread, the energies of his life! And more than this, with all this mighty sorrow weighing him down, he ever preserved a calm, serene, and even cheerful exterior. Few, even of his most intimate friends, knew the depth of his anguish, rendered all the keener, all the more poignant by the very effort to repress it. He felt it his *duty* to conceal it, even while conscious that like the Promethean vulture it was tearing away his heart! No man less heroic than himself, no man less sustained by Christian faith and Christian principle, could have borne his burden for an hour. Yet, even with him, it was only a question of time. General Lee died of a broken heart, and its strings were snapped at Appomattox!

In reference to the proximate cause of his death we were of the opinion that it was due to passive congestion of the brain, not proceeding far enough to produce apoplexy or effusion. There was no positive evidence of acute softening, of cerebritis or of embolism. There was no paralysis of motion or sensation, but marked debility from the first. His symptoms, in many respects, resembled concussion, without its attendant syncope. The treatment was based upon the above diagnosis.

Most respectfully yours,
R. L. MADISON, M. D.
H. T. BARTON, M. D.

REVIEWS AND BIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

ART. I.—THE PHYSICAL EXPLORATION OF THE RECTUM. By WILLIAM BODENHAMER, M. D. NEW YORK: W. WOOD & Co. 1870.

The author of this work is now so generally recognized as an authority on this subject and others kindred to it that it is time misapplied to commend him with confidence to professional public. In the present volume he discusses briefly but clearly the following subjects: The Anatomy of the Rectum; Physical Exploration; Sounding the Rectum, and the Ligation of Hæmorrhoidal Tumors. The size of the work is such as to enable all to add the volume to their libraries. It is just to the author to say that he presents useful and valuable facts not to be found elsewhere, and though many are disposed to differ with him radically in regard to many of his views and methods of treatment, it can not be denied that, from energy, persistency, independence and large experience, he has won the position of a valuable authority on the subjects of which he treats. There are few physicians who are not perplexed when treating the class of rectal troubles of which Dr. Bodenhamer so well and so ably writes, and there is no one who can not find in his pages useful hints and practical instructions as welcome as they are valuable.—E. S. G.

ART. II.—NOTES ON LIFE INSURANCE. By GUSTAVUS W. SMITH. FRANKFORT, KY. 1870.

This work is a complete analysis of the principles on which Life Insurance is based. It solves the various problems of Life Insurance by the simplest rules of arithmetic, without employing more algebra than can be mastered by beginners. The work is written in that clear style which was to be expected from General Smith, and constitutes, we think, a new era in the style of Life Insurance literature. Instead of dwelling upon miraculous stories of dread accidents by flood and field, and of widows saved and orphan children lost or starved, so familiar in the advertisements of Insurance Agents, Smith's discussion of the question appeals to the judgment of intelligent business men, to whom the notes are addressed, and he demonstrates the safety of the system by figures and not by foolish appeals to sentiment. This book is worth more to the public and to agents of companies than all the Life Insurance literature with which the country has been flooded.

In proof of this we have but to quote the language of a noted expert in the business, a distinguished actuary who occupies a very prominent position among professional actuaries. He says, in reference to this work, "that in it is given under the modest title of 'Notes on Life Insurance,' a logical and very thorough exposition of the principles and theory of assurance for single lives by the twofold method of arithmetic and algebra, and in such plain and familiar language and reasoning as to be readily followed by any person of ordinary capacity who has mastered perhaps not more than the first four rules of counting. I hesitate not to say that, in matter and manner, the work opportunely meets a great public want. To those who may feel interested, or only curious about this great financiering speculation which has so recently, as it were, flooded almost the entire continent, it reveals in plain words, by successive steps, the entire process of management, and dispels all the presupposed mystery in which the question was involved. The comments in the second part of the treatise deserve the thoughtful consideration of all officials as well as incumbents who stand under the banner of this mammoth institution of the age."

After this high indorsement of the work, by a distinguished expert in the business, we can add little to enforce its importance upon that large portion of the public who are directly or indirectly interested in a business around which so much mystery has been thrown. The "Notes on Life Insurance" effectually rend the veil and expose all that there is in the business; demonstrating its safety, but at the same time exposing the dangers of quackery in this as in every other business or profession.

Physicians are particularly interested in the questions of Life Insurance, and this work is commended to them as coming from one whose ability and honesty are only equaled by his lucidity of style and power of analysis.

The work is for sale at Morton & Griswold's, Louisville, Kentucky. S. B.

ART. III.—A GUIDE TO EXAMINATION OF THE URINE. By J. W. LEGG, M. D., London. Second Edition. Philadelphia: Lindsay & Blakiston, 1870.

This is certainly the most concise, intelligible, and useful manual, on this subject, at present before the public. Its cost is so very small (not exceeding a dollar) that it will be generally purchased by those not willing or able to purchase works of a more pretentious character. Indeed, for the busy physician, this volume is really more useful and valuable than those large treatises, in which the practical facts desired are so successfully buried, that nothing less than abundant leisure and heroic energy are adequate to their exhumation. It is not too much to say that with this little volume in hand, there are few physicians, indeed, who can not make an efficient and satisfactory examination of pathological urine. It is earnestly recommended, and no one purchasing it can possibly be disappointed. E. S. G.

ART. IV.—A MEDICO-LEGAL STUDY OF THE CASE OF DANIEL McFARLAND. By WILLIAM A. HAMMOND, M. D. New York: D. Appleton & Co., 1870.

In this volume, Prof. Hammond undertakes to present to the professional public, an analysis of this celebrated case. Public interest in the case itself has ceased, but physicians and lawyers would never forget its details and results, if the psychological deductions of Dr. Hammond could, by any possibility, receive the indorsement of the medical public, or the confidence of the Bench and Bar. The whole theory of the medical defense offered by Dr. Hammond is, that McFarland was insane, because he was the representative of intense anger. He claims that anger and insanity differ not in kind, but in duration; that duration constitutes the difference between what is termed insanity and what is regarded as anger; that a man is temporarily insane, when he is angry. [This is the only deduction from his text.]

As a professor of psychology, Prof. Hammond's views are entitled to much respect, but surely there is no one of common sense (as contradistinguished from the sense of the expert) who can tolerate such teaching. If anger is insanity, who can be made to suffer penalty for crime? Physical manifestations viz: expletives, threats, violence, etc., can not be accepted as the essential evidences of anger; for, in common phraseology, "it is not the barking dog that bites;" the most fearful and dangerous anger is that which "gives no sign;" the calm exterior, while determination to destroy is the fixed and only sentiment of the soul. If, then, under this mask of calmness, there may be the most deadly anger or temporary insanity, what judge, physician, or jury, can be found so bold as to say that any criminal, however calm externally when the crime was perpetrated, was not the representative of insanity, and therefore no longer amenable to the penalties of the law? If, under a calm exterior, there may be temporary insanity, and if, under a calm exterior, there be entire sanity, who so wise as to discriminate between the irresponsible insanity of him who slays his victim, being himself legally or morally innocent of crime, and the responsible sanity of him who is the living embodiment of all the legal specifications which in the aggregate make up the vilest criminal?

It is only necessary to examine, even in the most superficial manner, what would be the result of such teachings, to be satisfied that the good sense of every community would rise up in rebellion against them. They are so monstrous, so dangerous, so illogical and so unjust, that they would be expunged in anger from every statute book that could give them a temporary existence.

Let each reader reflect for an instant and he will find innumerable evils and objections inseparably connected with such medical ruling. Of these evils, there may be mentioned two which would alone be sufficient to condemn them. If anger be temporary insanity and (recognized as such) be a sufficient plea in extenuation of crime, he who was least angry (that is the violent and vulgar representative of indecent and rude manifestations of temper) would be most protected by the law, because he had given, at the period of the perpetration of the crime, those evidences which the masses accept as conclusive proofs of anger: while the unfortunate, whose organization and sense of refinement made him revolt at the vulgar exposure of anger, (that character of anger which, under the mask of calmness, is most deadly and dangerous) would, as having furnished no evidences of anger, be least protected by law: he who deserved least protection would receive most, while he who deserved most would receive the least!! These objections are, however, nothing comparatively, when the safety of society, indeed, of every member of society, is taken into consideration. Can any one imagine a more thorough pandemonium, a more complete hell on earth than would be the condition of any community, wherein the law (to which all look for protection) protected a criminal, because his crime was perpetrated in a moment of anger, or, as Dr. Hammond would claim, during a period of temporary insanity? Whose life could be safe, if men are told that the law grants immunity for all crime perpetrated during the heat of passion? When men really angry believed that any crime perpetrated could be perpetrated with impunity, what crimes would not be daily, even hourly, enacted? The pen of a Dante who could describe, with graphic power, the scenes of the *Inferno*, would here fall paralyzed and powerless from the grasp. The wildest pictures and the most fearful orgies which imagination could paint would become, by comparison, with such a condition of society, stale, flat and spiritless.

While then the Richardson-McFarland case with all of the disgusting details, revolting spectacles, and prurient descriptions, which recently disgraced an American court, the American press, and a large proportion of the American people, has been consigned to the archives of desecrated history, it should not be dismissed without at least one emphatic protest from the medical press in regard to the dangerous, mischievous, ruinous principles of psychology, advanced (and apparently accepted) by the chief medical witness employed in the medical defense of this case. E. S. G.

ART. V.—ANSWER TO DR. RUPPANER BY LEWIS A. SAYRE, M. D. New York: D. Appleton & Co. 1870.

It is time that the distinguished contestants retired or were removed from the deadly field, in which they have so courageously appeared; for though they have injured themselves irreparably, yet the wounds are not those which bring deserved laurels to either those who have given or received them. The medical public has forgotten the *casus belli* and cares not to be again the victim of its rehearsal.

In dismissing the matter, it may be said that the contestants have all to regret, and nothing over which to rejoice. Witnesses have testified to the veracity of both parties, but these parties impugn unlimitedly the veracity of each other, "Who shall decide when Doctors disagree?" It must be admitted, that in all details having reference to the case of laryngo-tracheotomy, Dr. Sayre sustains himself moderately well, while of Dr. Ruppaner in this connection, if Dr. Sayre be not mistaken, it is the melancholy duty of the journalistic coroner to say that there is nothing left, but what is termed in the phraseology of the law, a *corpus*; in the classic language of Horace, a "*corpus sine animo*;" or in the touching language of Mantalini, "a demnition body." So much for the laryngo-tracheotomy division of the contest. In regard to the partridge poisoning business, these unfortunate belligerents occupy before the public (if it be possible), an even more unfortunate position.

Dr. Ruppaner states that he made the diagnosis of poisoning by hydrocyanic acid; yet he prescribed sub-nitrate of bismuth, with infusion of gentian and peppermint water; manifesting an originality in toxicology, before which the laurels of Orfila should collapse into inglorious dust. While he says that the case was one of poisoning by hydrocyanic acid: that he treated it promptly and scientifically; the bystanders affirm that he knew nothing of the nature of the case, and the prescription record shows that the opinion of the bystanders was the only correct one in the case. To make Dr. Ruppaner's record, however, still more ludicrous, Dr. Sayre testifies that after Dr. Ruppaner had made the diagnosis of poison, and had made also that immortal prescription as the proper antidote for it, he (Dr. Ruppaner) met Dr. Sayre with this naive and unfortunate remark: Your patients are "very sick indeed, in fact, they are pretty *tight*."

What this speech manifests of a diagnosis of hydrocyanic acid poisoning, with the giving of a proper antidote, requires neither comment nor description: it tells the whole story, so far as Dr. Ruppaner is concerned. What is the record of the medical party of the second part, Dr. Sayre? Dr. Sayre says he made the same diagnosis as that already mentioned, yet when the patient said that it was the whisky drunk that had prostrated him, Dr. Sayre replied, "I guess you are right." A bystander corrected him, and stated his reason for a contrary opinion. Dr. Sayre, in his lecture, and in his published letter to Mr. Roosevelt, states that he did what Dr. Ruppaner says he also did—"I *immediately* administered the proper antidote"—claiming and gaining great credit for his promptitude and scientific efficiency. What, however, are the facts? When Dr. Ruppaner entered the drug store of Caswell & Mack, immediately after having made his scientific diagnosis and prescription, there was presented the most melancholy, yet ludicrous picture, known to medical literature. What was this picture? Dr. Sayre was on one side of the counter, in the drug store, and a clerk stood on the other. What was Dr. Sayre doing? He was asking the clerk to tell him the proper antidote for hydrocyanic acid. What was the clerk doing? He was trying to aid Dr. Sayre, by looking in the Dispensatory for the information. This information was finally secured. The drug clerk told Dr. Sayre what to do, and Dr. Sayre did what he was *told* to do. How does this statement impress the reader, when he had repeatedly been told by Dr. Sayre, that he (Dr. Sayre), had "immediately administered the proper antidote?" There is only one statement in regard to which Dr. Ruppaner and Dr. Sayre ludicrously agree, and this is, "that the proper antidote was *immediately* given!!!" "Are you there, Truepenny?" There is nothing more discreditable in this case than the fact that the bystanders, who gave to Dr. Ruppaner certificates, to the effect that he had treated successfully the unfortunate patients, whose behavior forms one of the comic chapters in medical history, should subsequently give certificates directly contradictory of the first, and intended to prove that to Dr. Sayre belonged the whole success of the treatment. There are many, very many statements made by the eminent toxicologists, who are parties to this deadly warfare, but enough has been written to show that anything more should belong to the Clinical, and not to the Review department of this journal; it would be a record of wounds with their results, and not a review of wisdom and scientific research. E. S. G.

MISCELLANEOUS.

"Non omnes eadem mirantur amantque."

The Hypodermic Syringe a Means of Diagnosis in Ovarian Disease. By Henry F. Walker, M. D., N. Y.—By aid of the microscope, with never so small an amount of the fluid contents of the tumor, a diagnosis can be made in every case. The means I would suggest, which possesses all the advantages of tapping with none of its hazards, is the hypodermic syringe, with the finest of needle points. This little instrument has often been used in diagnosticating purulent from serous effusions in the pleural cavity and pericardium, in detecting pus in cases of doubtful fluctuation under deep tissues, but has never to my knowledge been employed as a means of diagnosis in ovarian disease until within a few days, in the case herewith detailed.

The advantages it possesses are these: 1st, efficiency; 2d, harmlessness; 3d, painlessness.

1st. Efficiency.—This is undoubted in determining the nature of the tumor, whether solid, cancerous, cancroid, or cystic. By plunging in the needle and retracting the piston sufficient fluid will be withdrawn by the suction exerted for microscopical diagnosis, even though it be of the most adhesive form of colloid growth. If it be proved a cyst with fluid contents, the kind of cyst may be demonstrated in many instances, for by introducing the needle at different parts of the abdomen, and comparing the character of the fluids withdrawn, it can readily be determined whether they be drawn from a single cyst with uniform contents, or from a multilocular tumor, containing fluids of various density and composition. This tells more than the clinical history, palpation, and all other means of diagnosis combined, for it lets us look within the tumor itself.

2d. It is harmless.—The fine needle of the hypodermic syringe can be introduced even into an aneurism without danger, while the wound it makes in the sac of an ovarian cyst is so small that nature ignores it. The usual torcar makes a rent; this dissects its way between the tissues, and their contractility closes the wound.

3d. The painlessness of the operation is of less importance to the surgeon than to the patient; but to the latter, to whom the preliminaries of examination are often more irksome than the grand operation itself, it is very desirable that diagnostic procedures should be painless as well as harmless.

Remarks on the Early Symptoms and Treatment of Pott's Disease of the Spine. By J. A. Wood, M. D., N. Y.—Some years since (March, 1858,) I reported in the New York *Journal of Medicine* several cases of Pott's disease of the spine, treated with mechanical appliances and the internal use of medical agents, to the entire exclusion of setons, issues, and every other form of counter-irritation, and regardless even of the recumbent position.

In that journal I also gave a description, with illustrations, of the apparatus used in the treatment of the cases, a majority of which recovered, with the curvature completely reduced, although quite prominent when the treatment commenced.

Some of the patients had been confined to the bed several months, totally unable to sit up, wearied and wasted from the effects of the disease. One of them, with a bold angular curvature of the spine, having for its center the last dorsal vertebra, with severe bed-sores over both trochanters, had become very much emaciated, and could not be turned in bed without convulsions. So great was the irregularity of the surface from extreme emaciation that it became necessary to envelop the body in cotton before the apparatus, or corset, could be advantageously applied. No spasm ever occurred after its first adjustment, the bed-sores soon healed, the health, strength, and flesh, were gradually restored, and the curvature entirely reduced.

The balance of the cases then reported were of longer standing, where a large amount of bony substance had been removed by disease, and consolidation to a considerable extent had taken place. Still, they were much improved in health, strength, and general figure.

Since that report, over four hundred and seventy additional cases have been treated in like manner, and generally with similar results. About eighteen per cent. of the whole number were affected with paralysis of the lower extremities, and nearly twenty per cent. with abscess, both occurring at an earlier or later stage of the disease, which is met with at all periods of life from early infancy to old age.

The oldest person, however, that has come under my observation, affected with this disease, was aged fifty-five years. Another, in reference to whose case I was consulted by letter, was sixty years of age, and formerly President of one of our Western colleges, and was discharging the duties of that office when attacked with the disease. A more recent case, in a person fifty years of age, is now under treatment.

It occurs more frequently, however, in children under ten years old; but from two to five years of age may be considered the period of its most frequent occurrence.

The disease was often preceded by scarlet fever, whooping cough or measles; and children who had suffered from a severe attack of the former are very liable to fall into a state of permanently impaired health, and become a prey to some of the various chronic forms of scrofula, among the more serious of which is caries of the vertebræ.

Measles, also, in children and young persons of a scrofulous diathesis, frequently awaken the slumbering germs of that fearful malady, Pott's disease; while whooping cough acts only mechanically upon the system in developing more rapidly the disease already existing, but not detected, perhaps, by any of its characteristic symptoms when the cough commenced. In a few instances the disease succeeded severe and protracted typhoid fever; first manifesting itself when the system, from its reduced condition, was comparatively disarmed of all power of resistance to the development of any hereditary or constitutional taint that might exist, as is frequently the case with incipient phthisis.

From the commencement of the disease up to that period when the curvature first made its appearance (usually in the form of a small knuckle), the average length of time did not vary much from ten months, and was often characterized by paroxysms of most acute suffering. When paralysis of the lower extremities occurred, the recovery of the patient from his paralytic condition, under the treatment, was only a question of time, and that, often, of brief duration. When long protracted, it was more generally the result of imprudence and sometimes obstinacy of the patient, in persisting in too much exercise upon the feet when first commencing to walk.

In one instance, the patient, of a restive habit, had nearly recovered from the second attak when he fell from a considerable hight and became the third time paralyzed, from which he has not regained, and probably never will regain, the use of his limbs.

Paralysis did not, I think, exist in one instance where the disease was situated below the last dorsal vertebra; but it occurred in an increased ratio, proceeding upward from that point. Neither was there a single case of it in the upper extremities connected with *genuine* Pott's disease. Such cases are very rarely found on record. It did occur, however, in one or both arms in the case of the patient, sixty years old, already alluded to, as having caries in the cervical region, throwing the head forward and downward with the chin resting on the sternum. This deformity was attended with severe and incessant pain, over which opiates, as I was informed by the attending physician, although liberally administered, appeared to have little or no control.

The treatment in those cases, in addition to the mechanical support, consisted of dry friction applied to the back and limbs, with flannel, or the bare hand, and the use, sometimes, of the galvanic battery. The loss of the power of locomotion, as a contingent of this disease, may be viewed as comparatively of minor importance. The patient is very sure to regain the use of his limbs under treatment. With a restive disposition the paralysis sometimes proves an advantage, as too much exercise upon the feet interferes with the efforts to reduce the curvature, and renders the ultimate success of the treatment less certain.

Dr. Pott ascribed his success in the treatment of paralysis of the lower extremities in this disease to the use of issues applied near the affected portion of the spine, and recommended their continuance for several months after the patient had recovered from his paralytic condition. It may be well to consider whether the remedy here recommended possesses merit superior to every other in such cases. Of this there appears to be no direct proof; and if the fact can not be clearly substantiated by practical results, such practice should be discarded and treated as a source of unnecessary pain and suffering to the patient.

Abscesses sometimes created but little constitutional disturbance; neither did they in many instances appear to affect materially the ultimate results of the treatment, as ten or twelve only of the whole number thus affected terminated fatally, and those were generally of a most decidedly strumous character. In some instances the abscess terminated by absorption. This was more frequently the case when their locality was such as to subject them to the pressure of the corset. That result is very desirable whenever possible to effect it in any way, as it saves the patient from much discomfort, and, at least, *temporary* physical prostration, and the attendants from an unpleasant and protracted duty, as the discharge seldom ceases until consolidation of the affected portion of the spine is far advanced. A premature use of the lancet, when abscess is the result of caries of the spine, is more frequently attended with serious constitutional results than when its contents are permitted to escape by a spontaneous opening.

If an abscess is quite painful it may be better, pethaps, to give early exit to the pus, even at a greater risk of constitutional irritation; and if the surrounding tissues are likely to become too deeply involved by the further expansion of its walls, as is sometimes the case, the use of the lancet is imperative. Otherwise, it is better, usually, that the abscess should remain unmolested until its contents have approached near to the surface.

Very many of the cases presented for special treatment were of long standing, with marked deformity, impaired health, and general prostration, some having been subjected to one form of treatment and some to another. The seton, moxa, and various other forms of counter-irritation, had been resorted to, while in many cases the recumbent position was strictly enforced, in some instances, for a period of nine, twelve, and fifteen months, the patient not being permitted to rise from this position, even when taking nourishment.

But these different methods of treatment have all failed to accomplish what has often been effected, unattended with pain and suffering to the patient, by appropriate mechanical appliances in connection with a liberally sustaining diet and the use of such medicinal agents as the case appeared to demand, while the patient was comparatively unrestrained from air and exercise during the treatment.

Among the earlier symptoms of the disease is the manifest necessity for support, indicated by the patient's constant and instinctive inclination to seek it in leaning or throwing himself upon whatever may chance to come within his reach that will afford such support; and the more perfect is the design and adaptation of the support and the more promptly and skillfully it is adjusted and readjusted, the better for the patient, and the more successful and satisfactory will be the ultimate results of the treatment.—*N. Y. Med. Journal.*

Bromide of Potassium in its Effect on Children.—E. Moutard-Martin, of the Beaujou Hospital, France, reports a number of cases to show the effects of this drug on infants and small children. It is invaluable in all cases of dentition, where there are aggravating nervous symptoms, and it is improper to give opium. In sleepliness of infants, in cough purely spasmodic, he gives it in doses of ¾ gr. once or twice a day to children from three months to a year old. In purely nervous cough it is equally indicated; but it should not be given in diarrhœa, as it increases this difficulty. In excessive erethism of any sort, and especially in those cases of boys where there is almost constant erection of the penis, it works most happily.

Modern Surgery.—An illustration of the advance in surgery made in the present century may be found in the fact that the operator who first successfully tied the internal iliac artery for aneurism, Dr. Stevens, died only two years ago. Dr. S., who then lived in the West Indies, was only twenty-six years of age, in 1812, when he achieved this feat. Nine other operations of the kind, performed since, are upon record, with four successes, so that the proportion of deaths is only fifty per cent—a singular favorable showing for so grave a procedure.

Air in Wounds.—Mr. Skey expresses very reasonable doubts of the injurious influence of atmospheric air in wounds. In the case of compound fractures, he attributes the slowness of the healing process, and other untoward symptoms, rather to the laceration and contusion of the structures than to the admission of air; adding that in operations for empyema and hydrothorax, he has never made any attempt to exclude air, and quoting one case in which he and the late Dr. Todd intentionally admitted air enough to take the place of six pints of serous fluid, without the slightest evil result.—*Medical Gazette.*

Our excellent contemporary, the *Richmond and Louisville Medical Journal*, with its issue for July, closed its ninth volume. While the editor modestly contents himself with calling attention to the quantity of matter laid before his readers during the past half year, we are happy to add our testimony as to its quality; and to fully indorse the claims of his *Journal* to be considered, as not only "the largest medical monthly in America," but one of the best.—*New York Medical Gazette.*

Chloral in Asthmatic Bronchitis.—Dr. Caspar Morris says he was recently in attendance upon a lady who suffers from frequently recurring attacks of bronchitis, with asthma. The skin was hot, the frequency and difficulty of respiration very great, the râles loud and musical, and the secretion very profuse, so that the mucus could be poured from the cup in an abundant, ropy stream. His attention had been arrested by the account recently published of the hydrate of chloral, and as she had not been relieved by any remedy which he had previously tried, except to a slight degree by chloric ether, it occurred to him that the chloral might be of service. He ordered five grains in one fluidrachm of the syrup of lactucarium of Aubergier, to be repeated in two hours, if required. The two doses afforded entire relief; and she has found great comfort since from a single dose taken at bedtime; a good night's rest being secured by it. He mentions it as a valuable aid in the treatment of this intractable and distressing disease.—*American Journal of Medical Science.*

Regeneration of Nerve Tissue.—Voit has recently proved the reproduction of the cerebral tissue in the pigeon, and the coincidence of this reproduction with almost complete renewal of the cephalic functions. MM. Masius and Van Laer, professors in the University of Liege, deduce from recent experiments—detailed at length in a late number of the *Monthly Microscopial Journal*—that the spinal cord in the frog can recover rapidly a loss of substance which has taken place in its own tissues, and repair its primitive anatomical and physiological properties.—*British. Med. Jour.*

A very careful and exhaustive *resumé* of the literature of "Aphasia and Physiology of Speech," by Dr. T. W. Fisher, of Boston, has been published in recent issues of the *Boston Medical and Surgical Journal*, leading to the following conclusions:

I. Most cases of aphasia include both aphemia and agraphia.

II. The concurrence of aphasia and right hemiplegia is very common. In such cases the mental impairment is not decidedly greater than in left hemiplegia without aphasia.

III. The symptoms in Aphasia may have a decided mental or motor aspect, or partake of both characters.

IV. Theoretically, the lesion in aphasia may impair the power of speech by producing disorders of ideation, loss of memory for words, interruption of voluntary transmission, interference with auditory impressions, defects of co-ordination, and paralysis of the muscular apparatus. Practically, it gives rise to two or more forms of disorder.

V. As a rule, the lesion will be found in the anterior lobes, and in the left anterior lobe in a proportion of about 15 to 1. There are well-marked exceptions to the proposed laws of MM. Bouillaud and Dax, while the evidence in favor of M. Broca's location is quite insufficient to justify his inferences.

VI. The lesion in aphasia usually involves the white as well as the gray substance, and is often due to embolism of the left middle cerebral artery, followed by softening of the parts supplied.

VII. There is anatomical evidence of the most complex and delicate systems of cells and fibers in the cerebral convolutions, and it is a fair inference that as in the cell groups of the cord, medulla, and basic ganglia, there are here carried on special functions, but of a higher order.

VIII. There is good evidence of an increasing elaboration of structure and function in ascending from the cord to the convolutions. This ascending scale may be arbitrarily divided into centers, at once independent and subordinate, having general analogies of action, with special differences, but which are difficult of precise limitation.

IX. The centers of muscular co-ordination for speech have with most reason been assigned to the medulla, or in proximity to the nuclei of the controlling nerves.

X. The faculty of articulate speech, in its mental as well as its motor aspect, is an acquired one, depending on the gradual organization and association of auditory impressions, ideas and movements.

XI. It is not impossible that the same convolutions uniformly perform the same functions, or that groups of ideas may be related by a superficial contiguity in the cortical substance; but there is no good evidence that such groups correspond to any of the so-called mental faculties, and no such faculty has yet been definitely located.

XII. There is some evidence of both a symmetry of structure, and difference of function, between the two hemispheres, which is at present best accounted for by the theory of unilateral education, depending on anatomical differences not yet clearly understood.

Chloral in Midwifery.—Mr. E. Lambert, late House-Surgeon to the Edinburgh Maternity Hospital, has published in the *Edinburgh Medical Journal* for August, an account of eleven cases of labor in which chloral was administered. Three of them were under the notice of the late Sir James Simpson. The conclusions at which Mr. Lambert arrives are the following:

"1. Chloral is an agent of great value in relief of pain during parturition. 2. It may be administered under favorable circumstances during and at the close of the second stage, with the result of producing absolute unconsciousness, in the same sense in which we understand unconsciousness under chloroform. 3. When thus given successfully, it has this advantage over chloroform, that it requires no interference with the patient. 4. It is desirable to retain chloroform in the position which it at present occupies in midwifery, and to reserve for the agency of chloral the first stage of labor. If, however, chloral, or some agent having analogous properties, be found successfully to relieve the pain of uterine contraction, the use of chloroform will be restricted to a lesser period of the duration of labor, or to the facilitation of manual or instrumental interference. 5. It is demonstrated that a labor can be conducted from its commencement to its termination, without any consciousness on the part of the patient, under the sole influence of chloral. 6. The exhibition of chloral in nowise interferes with the exhibition of chloroform. 7. The proper mode of exhibiting chloral is in fractional doses of fifteen grains every quarter of an hour until some effect is produced; and according to the nature of that effect the further administration is to be regulated. Some patients will require doses of one drachm; and it is better to produce an anæsthetic effect by three drachms given in the space of two hours, than by one drachm given singly. 8. The effects of chloral are continued beyond the period of complete parturition; and the repose experienced by the patient after her labor is one of the favorable circumstances to be noted in considering its application to childbirth. 9. Any stimulating effects, in the form of general excitability, occasionally observed during the administration, have passed away very rapidly. 10. Chloral not only does not suspend, but rather promotes uterine contraction, by suspending all reflex actions which tend to counteract the incitability of the centers of organic motion. 11. Labors under chloral will probably be found to be of shorter duration than when natural; for unconscious contractions appear to have more potent effects than those which are accompanied by sensations of pain. 12. Experiments are required in order to determine whether there exists the same antagonism between ergot and chloral as is known to exist between strychnia and chloral. 13. The general conditions under which chloral is to be administered are the same as those which regulate the administration of chloroform, and the rules laid down by Sir James Simpson in connection with this subject must be rigidly adhered to."

On Visceral Neuralgia and Angina Pectoris.—Prof. Eulenburg, of Berlin, has made a special study of neuralgia of the visceral organs, including angina pectoris. This latter disorder, he considers, can occur as a symptom of various diseases of the heart, and it seems especially associated with ossification of the coronary arteries. Cases, however, do occur in which there are lesions of those arteries without the angina pectoris, and, on the other hand, in which there is the pain without the lesion.

All the nerves which are associated with the heart have been in turn considered the seat of this disease. M. Eulenburg agrees with those who do not think it a simple hyperæsthesia of the cardiac plexus, but give to certain motor nerves of the heart a participation in the change. We can not, however, as yet distinguish the individual nerves which are implicated, or the functional changes which produce the attacks. Notwithstanding the progress in the study of the nerves of the heart in the last ten years, it is still impossible, with the complexity of the phenomena with which we have to deal, to find one general and absolute explanation of the symptoms. We must necessarily content ourselves with a physiological analysis of the symptoms, and demonstrate experimentally how far each group of nerves is involved.

The pain of angina pectoris seems to be traced to the cardiac plexus of nerves. The heart appears, indeed, in the healthy state, to be destitute of sensation; but in diseased conditions might it not be the seat of pains analogous with those of gastralgia, colic and the like? In mammals the heart receives sensitive nerves which do not originate in the pneumogastric, since, after section of both vagi, the animal shows signs of pain when the auricles are irritated; it may be, therefore, that the distress is due to fibers from the sympathetic, for it resembles that produced by the irritation of certain sympathetic nerves in the viscera as in gastralgia.

This neuralgia of the cardiac nerves is easily explained where there is mechanical irritation from some organic affection, like ossification of the coronary arteries or valvular lesions of the aorta. But where there is no such condition, the explanation is still wanting; and, moreover, it fails to explain the paroxysmal character of the attacks.

The radiation of the pain toward the extremities is accounted for by the anastomoses existing between the cardiac nerves and the cervical ganglia on the one hand, and the roots of the cervical nerves and the branches of the brachial plexus on the other.

The pain in the course of the cervical plexus is due to the connection between the cardiac plexus and the anterior branches of the last four cervical and the first dorsal nerves. The pain in the left arm is traced to the connection between the anterior branch of the first dorsal nerve and the inferior trunk of the brachial plexus. The pain is more frequent in the left side, either on account of the position of the heart and aorta on that side, or because the anastomoses are more intimate there. The superficial pain in the front of the chest is due to the communication of the brachial plexus with the thoracic nerves, and that in the region of the diaphragm to the anastomosis of the phrenic with the fourth and fifth cervical and with the cardiac nerves. The dysphagia, nausea and impaired phonation, may be traced to the connection between the par vagum and the sympathetic.

Except the pain, the most important symptom pertains to the impaired action of the heart during the attack. But it can be shown that the phenomena can have their origin in different groups of nerves. The heart contains ganglia which constitute an automatic system, and conditions which paralyze these cause an arrest of the heart's movements.

Thus Landois has demonstrated that the automatic action of the ganglia is impaired in two ways—the function is either stimulated or much depressed. Weak solutions of certain poisons irritate the ganglionic cells and stimulate the action of the heart; concentrated solutions immediately paralyze the ganglia and arrest the heart's movements. In certain diseased states of the heart, the cardiac ganglia may be affected in various ways. Under the influence of certain lesions of the vessels, or of the parenchyma, which modify the distribution of blood to the ganglia, or by such changes in the muscular tissue as myocarditis and fatty degeneration, it is possible that the heart may be affected in both directions; in one case, the stimulated ganglia hasten the movements; in the other, the action of the heart is paralyzed by a too powerful stimulous.

The two phenomena may manifest themselves alternately during an attack of angina pectoris.

Other physiological facts favor this theory that the cardiac ganglia may be influenced in consequence of a diminished supply of blood, such as would result from disease of the aorta or of the coronary arteries. Indeed, Bezold has observed that the action of the heart is modified in the rabbit where the coronary arteries or their branches are closed temporarily, after first dividing the pneumogastric, the sympathetic nerves in the neck and the curvical portion of the spinal cord. In the first ten or twelve seconds, no noteworthy change is seen, but gradually the heart beats more slowly and irregularly; there are in the first two or three quarters of a minute alternately fast and slow impulses; and, at the end of a minute or a minute and a half, the ventricles cease to contract; the movements recur, however, as soon as the pressure is removed and the circulation is restored.

Is it possible to explain the symptoms by changes in the pneumogastric nerves? According to Eulenburg, in the majority of cases the state of the pulse is opposed to such an hypothesis. Indeed, the pulse is quick and small, thus indicating a paresis of the par vagum. Yet there are cases in which the pulse is slow, and others in which, with this slowness, an increase in the force has been noticed. These exceptional cases are cited by Eulenburg in favor of the theory of stimulation of the pneumogastric. To these facts should be added a remarkable observation of Heine in which, after symptoms resembling those of angina pectoris, there were found lesions of the par vagum accompanied as well by changes in the phrenic and cardiac nerves. These exceptions show that the changes in the pneumogastric nerve can hardly explain the majority of the phenomena.

It remains to examine the part which the sympathetic nerves may play. These nerves proceed from the brain, from the curvical and upper part of the dorsal portion of the spinal cord, and, passing through intermediate curvical ganglia, their function is to transmit to the ganglia the central excitation, acting in a direction contrary to that of the pneumogastric. Consequently, the excited action of the heart in angina pectoris may be considered as dependent on the exaggerated action of the ganglia through the sympathetic.

This theory that the cardiac plexus and more especially the sympathetic nerves are affected in this disease finds support in an observation by Lancereaux, in which he points out certain histological changes in the cardiac plexus.

The sympathetic system can participate in another way. The sympathetic trunks contain the vaso-motor nerves; changes in these branches will determine local affections in the circulation whence result modifications in the intra-aortic pressure and consequent feebleness of the cardiac impulse.

The complex series of symptoms which characterize angina pectoris may, in short, be the result of various conditions; may, indeed, exist entirely regardless of any participation by the heart; all the cardiac nerves are more or less involved, and the numerous modifications observed in the different patients can be referred to a more or less prominent implication of the nerves of the cardiac plexus, the influence of the nerves of the great sympathetic predominating, since they form the greater part of the plexus.—*Gazette Hébdomadaire.*

Adhesions in attempted Ovariotomy.—When an ovariotomist finds, after his abdominal incision, and the evacuation of the contents of the cyst, that the latter is completely adherent to the parts around, he generally closes the wound, and leaves the operation unfinished. Not so Dr. Jouon, Professor at the Medical School at Nantes, in France. Being called upon to perform ovariotomy upon a married woman of twenty-nine, he observed, after his incision from below the umbilicus to the pubes, and the puncturing of the cyst, that the adhesions were so tight that the sac could not be isolated. The idea of actual ovariotomy was then given up, and the case treated as one of artificial anus. The margins of the wound were secured against the cyst, and a tent passed into the latter. The patient had a fearful reaction; but by dint of attentive care, and the syringing of the cyst, first with alcohol and water, and afterward with tincture of iodine, with appropriate narcotic and tonic remedies, the woman was quite restored in a little less than four months. —*Lancet*, July 23, 1870.

The Liver the Seat of Formation of Urea.—The latest researches upon the place of origin of urea, and especially the beautiful experiments of M. Gréhant, have demonstrated that the kidneys are by no means secretory, but purely excretory, organs for urea. Dr. Cyon, in the last number of the *Centralblatt*, publishes a few facts in the form of a provisional communication, to show that it is probably produced at the liver. The plan of experimentation adopted (in common with M. Istomin) was as follows: The whole of the blood was abstracted from the carotid of a dog, and a portion, after being defibrinated, was transmitted by means of mercurial pressure through the liver. Coincidently three canulæ were introduced, one into the inferior vena cava, the second into the hepatic artery, and the third into the vena porta. The results of careful analysis showed that the blood which had passed through the liver contained a much larger proportion of urea than ordinary arterial blood. In one experiment 100 c. c. of the arterial blood, when defibrinated, contained .08 grammes of urea; but after having been passed four times through the liver, the same quantity contained .176 grammes.—*Lancet*, Oct. 1, 1870.

Supposed Noxious Effect of Fruit.—Every summer, when complaints of the bowels set in just as the season for fruit commences, many people, and not a few physicians, are wont to exclaim, "So much for fruit!" We are glad to see that Dr. Snow, the indefatigable Health Officer of Providence, R. I., takes pains to correct this prevailing error. The great mortality in the fruit season is among children who are too young to eat fruit. Both common sense and statistics go to prove that a reasonable proportion of sound and mature fruit and vegetables conduces to health, and not to sickness.

Since the above was written, the monthly health report of Dr. Logan (q. v.) has come to hand, enforcing the same estimate of the relation of fruit to health.

Amputation at the Knee-joint.—In the address on Surgery by Dr. Heath, made to the British Medical Association at its late meeting at Newcastle, it is stated: "Few amputations are followed by a more satisfactory result than that through the knee-joint, when done so as to leave an anterior flap to cover the end of the bone, from which the articulating surface need not be removed. The wound heals rapidly; no raw surface becomes exposed, and a shapely, useful stump is the result."

Intra-Uterine Medication.—Dr. Frederick D. Lente, in the New York *Medical Journal* for September, refers to several cases of serious injury resulting from vaginal injections of weak solutions of sulphate of zinc, or even of pure water. He thinks the orifice of the tube must have entered the mouth of the womb. To prevent this he always has the opening at the extremity closed, so that the injected liquid shall flow out laterally. Dr. Barnes, in his recent work, gives eleven cases of death from uterine injection, and suggests three causes: First, shock; second, air entering the vessels; third, fluid passing the Fallopian tubes. Dr. Lente considers neither of these explanations satisfactory, and regards the retention of the liquid in the uterus, and the distention of that organ, as much more likely to do mischief.

Poisoning by Worm Lozenges.—Dr. B. D. Gifford reports to the *Bost. Med. & Surg. Journal* a case of poisoning of a child three years old, who had eaten seven "worm lozenges." The symptoms were those of strychnia, and indications of the presence of strychnia were found in lozenges from the same parcel. The vermicidal agent was supposed to be santonin. In the *U. S. Dispensatory* a similar case is related;

which occurred in France nine years ago. The patient was poisoned by what was considered an overdose of santonin, but strychnia was afterward detected. How came the strychnia in the two parcels of santonin? Or was there some other toxic element developed in the manufacture of the santonin, resembling strychnia in its physiological and chemical relations?

Mr. Frederick Skey strongly advocates the refracture of bones in cases of mal-union; an operation which he considers as unattended by any risk of non-repair or of injury to other parts than the seat of the former fracture, and which, as regards time, is limited only by "the power to break."

Puerperal Fever treated by Injecting Ammonia into the Veins.—Some of our chemico-physiologists have attempted to explain the toxic action of urea by supposing it transformed into ammonia in the circulation. But Tyler Smith, of London, as referred to in the *American Journal of Medical Sciences*, has treated and cured a desperate case of puerperal fever by injecting ammonia into the veins. He employed about seven minims, diluted with three times that quantity of water. Under this treatment the symptoms of uremic poisoning disappeared.

The Age at which Menstruation Commences.—Dr. Walter Rigden (*Lond. Obstet. Trans.*) gives the subjoined statistics obtained from females who were confined at *University College Hospital.* In 2,696 cases menstruation occurred for the first time:

At the age of 9	in 3 cases.	At the age of 18	in 150 cases.
" " 10	" 14 "	" " 19	" 76 "
" " 11	" 60 "	" " 20	" 29 "
" " 12	" 170 "	" " 21	" 7 "
" " 13	" 353 "	" " 22	" 3 "
" " 14	" 560 "	" " 23	" 2 "
" " 15	" 540 "	" " 24	" 0 "
" " 16	" 455 "	" " 25	" 0 "
" " 17	" 272 "	" " 26	" 2 "

Why Don't the Doctors use Common Names?—A physician in Texas writes to the *Philadelphia Medical and Surgical Reporter*, extolling the juice of the leaves of "*cockle-burr*," as a hemostatic, and inviting practitioners everywhere to give it a trial. And now what is the "cockle-burr?" There are probably half a dozen plants of that name in the United States—each section of country having one of its own. So much for the advantage of using common names instead of precise and definite scientific appellations, which can not lead to error.

Dr. Richardson, the English Physiologist, maintains that gases pass directly through the tissues of the body, especially the coats of veins. His experiments seem to prove this. He pumped carbonic acid into the cranial cavity of a rabbit, through a tube placed in the nostril. The gas showed itself promptly in the right cavity of the heart.—*Medical and Surgical Rep.*

Chloroform to Detect Feigned Insanity—A German medical journal mentions a case which happened in New York, and which we do not remember to have seen published at home. A man who had committed several murders and who appeared to be insane, was put under the influence of chloroform. As he began to revive, he answered questions with truth and reason. As soon as complete consciousness was restored, he saw that he had betrayed himself, and made a full confession.

A Chemical Expert not Expert.—A chemist who was examined as an expert in a recent trial in a San Francisco court, spoke of "Chlorate of Potassium" and "Carbonate of Sodium," and described the former as composed of chloric acid and potassium—at least he is so reported in the papers.

Needle Gun and Chassepot Wounds.—The *British Medical Journal*, August 20th, says: It is stated that of the wounded who are received in the German hospitals, the least severely wounded are the French prisoners who have been hit by the projectiles of the needle-gun. Unless they strike full upon the body these balls, in the majority of cases, inflict mere flesh-wounds. From their elongated forms, they turn readily upon striking a bone, and, consequently, the wounds are comparatively trifling. Far more serious are the ragged wounds inflicted by the Chassepot, which, at short distances, appear to hit extremely hard; but worst of all are the wounds of the mitrailleuse balls, which seem completely to smash any bone against which they strike.

Treatment of Obesity.—The *Tribune Medicale* of May 29th, 1870, mentions the case of a medical student of Paris, who, at the age of twenty-two, consulted Dr. Labat, in July, 1869, for an inconvenient accumulation of fat. Weight, 310 pounds; abdominal circumference about one yard and a half, and all the concomitant distressing symptoms. The patient was sent to Marienbad, in Bohemia, where he drank the waters, took reducing pills (with an alkaline base, to saponify the fat), had vapor baths followed by rubbing, douches, frictions with a brush moistened with vinegar of pine-cone, and wet cloths on the abdomen on going to bed. This was carried on from the 20th of July to the 31st of August—viz: 41 days. He had then lost 34 pounds (Austrian weights being heavier than French). At Paris the Marienbad waters, and vapor baths were continued for a fortnight. The patient then commenced the grape treatment, both in the French capital and at Fontainebleau, with a few vapor baths. Weight on leaving off the treatment, Nov. 10th, 257 pounds; abdominal circumference about 1 yard 7 inches.

Placental Attachment.—Rigby has found the placental formation and attachment far oftener on the left side. Lange, on the right. In 188 cases, Grenser found the placental implantation 77 times on the anterior, and 93 times on the posterior wall. Martin found the placental seat in 63 cases of recently dead puerperal women, 10 times entirely on the anterior wall, 6 times anteriorly and to the right, and 8 times anteriorly and to the left; 15 times wholly posteriorly; 5 times entirely on the right wall, and twice entirely on the left.—*Am. Jour. of Obstetrics.*

Fœtal Placenta.—The fœtal portion of each cotyledon consists of branching villosities of the chorion, and these branches and branchlets are given off at every possible angle from the main trunks. The final terminations of the ramifications, be they pyriform, cylindrical, fusiform, pedunculate, or drawn out into threads, are always free and unattached.

By injecting the umbilical arteries and veins with different colored materials, and by corroding away the maternal placenta Hyrtl has demonstrated these facts in the most wonderfully beautiful manner.—*Whittaker's Prize Essay.*

Fatty Degeneration of the Placenta.—The placenta, as is well known, possesses no nerves, and, according to Jossinsky, all the uterine glands in the mature placenta, both with and without epethelium, show a pretty strong fatty degeneration.—*Am. Jour. of Obstetrics.*

The Threapeutics of Chronic Constipation. By JOHN KENT SPENDER, M. D., London, Surgeon to the Mineral Water Hospital and to the Eastern Dispensary, Bath.—I do not think that the usual professional treatment of chronic constipation of the bowels is very satisfactory. It appears to aim at the relief of the one obtrusive symptom, and to help the patient out of a present difficulty without sufficient reference to the future. It removes the obstacle of to-day by legitimate and easy means, but the obstacle of to-morrow is not prevented; hence, what is done to-day must be done again to-morrow, and the remedial formula has an awkward *ad infinitum* look about it. My object in this paper is to try and raise a point of every-day practice to a scientific level.

The peristaltic action of the bowels is essentially a quiet and unfelt reflex function. Assuming that the voluntary movements subsidiary to defecation are efficiently performed—I mean the pressure exercised by the muscles of the abdomen on its containing viscera—the fault lies mainly in a defect of the peristaltic action: either it is too slow, or it has too little force, or both force and time may share the torpidness so characteristic of the phlegmatic and scrofulous temperaments. And the root of this state is a sluggish habitude of the nervous system: an insusceptibility which is strictly congenital, which may be roused for awhile by dynamic and even by physical stimuli, but which tends to lapse by inherent vice into its chronic torpor. This is the key to any right theory of obstinate constipation of the bowels. The term implies simply that a person being otherwise in tolerable health, the excretory function of the alimentary canal is performed at rarer intervals than is compatible with complete health. And a twofold discomfort arises—partly mechanical, and partly depending upon a contamination of the blood by excrementitious matters.

Among the odd idiosyncrasies which nature displays in the regulation of the digestive functions, an infrequent evacuation of the bowels is very common; and it is important to distinguish this condition from the genuine morbid state rightly denominated constipation. For what is natural to a person can in no sense be called a disease. Many persons seem well, and really are well, whose physiology could not be transferred to any one else, without becoming a pathology more or less developed. No strong hard line can ever be drawn between what is health and what is not health. And it may be declared with absoluteness that if a person can bear an infrequent flux from the intestines, without the slightest apparent inconvenience, it is a part of his regular vital plan, and ought not to be stigmatized by the name of disease at all.

It does not come within the scope of this paper to discuss the subject of constipation as subordinate to other maladies, but only when it exists by itself as a primary disorder of function. Assuming, then, that we have before us a case which clearly deserves the name of constipation of the bowels, the therapeutic inquiry is, how shall it be treated? And by the word treatment, I push aside all temporary refuges and expedients, all drastic doses and exosmotic drains which merely empty the bowels *pro hac vice* in the fashion of flooding out an unclean sewer. It may be necessary to do this once as a preliminary step, but what ought to come next? The object of philosophic medicine is to enable the patient to live without medicine—to realize such a state of health that the medicine (that is, the medium of health) is no longer required. To purge again and again largely and painfully for a chronic disorder is to clear away a nuisance without removing its cause, and therefore the nuisance must again and again recur. Galen and Hippocrates would have done more than this, an herbalist or quack can scarcely do less.

And yet in recent sound and classical works on digestion and its troubles, I find no very precise indication of higher aims. Aperient medicines are enumerated, and their characteristic properties described, with the completeness and minuteness of a system of Materia Medica. Each drug has its specific virtues; give this or that according as the constipation is more or less obstinate, and according as you have an adult or a child, a strong or a weak person, to deal with. But when the present exigency is remedied, what about a week hence, a month, a year? Is the same drugging to go on eternally—the same potions, pills, or powders to come round in rhythmic order, always satisfying the present need and no more?

The plan which I now propose does bestow some care on the future, and professes to be, so far, curative in its operation. It comprises four therapeutic factors; (*a*) minute and frequent doses of watery extract of aloes, very rarely of extract of colocynth; (*b*) a dose of sulphate of iron (gr. jss. or ij.) always combined with each dose of the direct aperient; (*c*) regulation of the diet; (*d*) constitutional exercise. I have to write chiefly of factors (*a*) and (*b*). The quantity of extract of aloes, in all but extraordinary cases, should not exceed one grain. It is conveniently given in the form of a pill. With this pill there should always be mixed a dose of sulphate of iron varying from one to three grains; this is the essential point of the treatment. Any other tonic of the neurotic kind can not supply the place of iron; for the purpose I am now relating, iron is not only *facile princeps*, but is not interchangeable by anything else. Extract of nux vomica may be added, if the prescriber pleases, as an ornamental appendage or as a means of blending the other constituents together; and belladonna is a remedy of definite auxiliary power, but both these drugs, *quoad* constipation of the bowels, are uncertain or unsatisfactory, and rarely do permanent good. I begin, then, by desiring an adult patient to take a pill composed as above three times a day, immediately after the principal meals. He is cautioned that at first there will be probably no apparent effect, and that two or even three days may pass before any medicinal evacuation of the bowels takes place, perhaps even then difficult and discomforting. But within the next forty-eight hours there will be most likely an evacuation of the bowels once or possibly twice in the day; *but nothing approaching to purgation ought ever to be permitted*, and therefore the patient must be instructed, on the occurrence of the first loose motion, to withhold a pill, and to take only one in the morning and one in the evening.

He then continues for a time his morning and evening pill, and is pleased to discover that so slender a medicament has such a decided effect. Not improbably, at the end of another week or fortnight he is compelled by the same reason as before to drop another pill, and the same result is now brought about by one pill daily as was originally produced by three pills. Within another month, he may reduce his allowance of medicine to a single pill once or twice a week; and, finally, his whole scheme of medical treatment becomes merely preventive in its design and scope, and he takes a pill occasionally for the sake of maintaining health and warding off old troubles.

When there is a real or fanciful difficulty in the administration of pills, the best way of carrying out the plan above described is by combining the *mistura ferri composita* with the *decoctum aloes compositum*, the doses being determined by an application of the same principles. There is wider room for the addition of auxiliary drugs, but, on the whole, I have not obtained such satisfactory results by this method.

I can not lay too much stress on avoiding anything like an over-purgative effect by the drugs employed. If on this account the treatment has on any occasion to be stopped, there is so much time lost and so much ground to be retraced. A patient may, unintentionally, exaggerate his difficulties, but the skillful practitioner will not, therefore, depart from the fundamental principle of minute and frequent doses of his medicine. In this way nature is coaxed and assisted, instead of being forced and worried; and I declare, without hesitation, that only by this means can a sure and permanent benefit be realized.

The urgency of regulating the quantity and quality of the food is so obvious, that I need add nothing to what has been so well laid down by systematic writers. The necessity of constitutional exercise—a definite amount every day—is equally clear, and its physiology requires no illustration here. The serious and ingravescent forms of constipation which are secondary to stricture (cancerous or fibrous) may be temporarily relieved by the plan I have sketched; but ultimately the obstruction will defy all ordinary remedies, and our suspicions should be aroused to the possibility of organic disease, whenever a retrograde step occurs again and again after apparent success has been attained.

There is a form of constipation, observed chiefly among women, marked by intense neuralgia of the rectum after every motion. It is well to ascertain that there is no fissure of the mucous membrane; but, this point being assured, speedy (and eventually perhaps complete) relief may be obtained by the following powder taken twice a day:—Sesquioxide of iron, one drachm; bitartrate of potash, one drachm; powdered cubebs, fifteen grains; mix. This may be continued once daily for weeks or months. I conclude with a caution. Constitutional tuberculosis had better be let alone, *quoad* aperient medicines. Peritoneal or intestinal tubercle is a grave malady to light up, and a state of comparative constipation may be nature's method of keeping things quiet in the abdominal region. At all events, aperient medicines of every kind ought to be strictly subordinate to general treatment.

MEDICAL NEWS.

"Nulla dies sine linea."

Fatigue to the Eyes caused by Artificial Light.—V. Meunier states, in *Cosmos*, that the great difference between sun and artificial light is due to the fact that, of the light emitted from the former, about half the quantity of rays are luminous and caloric at the same time; but, as regards our artificial light, for ordinary oil (colza oil), the amount of non-luminous, yet caloric, rays is 90 per cent.; for white-hot platinum, 98 per cent.; alcohol flame, 99 per cent.; electric light, 80, and gas-light, 90 per cent.; while for petroleum and paraffin oils, the amount is 94 per cent. It is this large quantity of caloric rays in artificial light which causes the fatigue to the eyes; but this inconvenience may, according to the author, be almost entirely obviated by intercepting the thermic rays by glass, or better yet, mica plates. The use of these renders the light soft and agreeable to the eyes.

Ovariotomy in a very Young Subject.—Prof. Jonon, of Nantes, not long ago removed an abdominal tumor from a girl, 12 years of age, who had been suffering eighteen months. The cyst was multilocular, and the adhesions numerous. On the forty-sixth day after the operation she was well.

Prof. Von Graefe's Fortune.—The annual income of the late Von Graefe, inherited from his father, was about $25,000, while that from his profession was estimated at $100,000.

Steamboat Ambulances on the Rhine.—Ten steamboats are on service as floating ambulances on the Rhine, from Mannheim to Dusseldorf. The Geneva flag floats at the topmast of each. The wonnded are better located in these floating hospitals than they were before; but there is a want of medical aid in them.

The boy of Calvin Edson, the "living skeleton," who was once a practicing physician, is now exhibited in Albany College Museum as a mummy.

The Temperature.—A careful examination of the thermometrical record shows that, taking the temperature of June, July, and August, the average mean was 78.92 degrees, which is the highest on record in the locality of Philadelphia since 1790.

Among the physicians killed on the field, victims of their devotion, is M. Milliot. He was extracting a bullet from Colonel Colomieu, now in the hospital of Val-de-Grace, and had just successfully completed the operation, when he was killed on the spot.

The three most celebrated surgeons in Berlin, Drs. Langenbeck, Bardeleben and Wilmst, have all entered the army.

We have also to note the death, in Paris, of M. Auzias-Turenne, who took an active part in the earlier experiments and discussions on the subject of syphilization.

So thoroughly is Ireland now guarded from small-pox by compulsory vaccination, that only one death from it occurred in that country during the last quarter.

A hospital for diseases of women is to be erected in honor of the memory of the late Sir James Y. Simpson; and it is to be planned in accordance with the views Prof. Simpson lately expressed respecting the arrangement of a hospital system.

Amœboid Movement of Pigment Cells.—Dr. Saviotti, of Turin (*Lancet*, May 28, 1870), has confirmed Cohnheim's remarkable researches by the observation of the reverse process, viz.: the entrance of pigment cells into the capillaries. While observing the phenomena of inflammation in the web of the frog's foot, he observed the massing of the pigment cells around the vessels, and finally, after a few hours, their disappearance by penetrating the capillary walls by their amœboid movements. As complementary to Cohnheim's researches, and in their bearing on the absorption of solid matters, these observations are of the utmost importance.

Dr. J. Gibbons Hunt, of Philadelphia, states that the amœboid movements observed in the white blood-corpuscle are not peculiar to animal life, but are even more actively performed in the nucleus of the cell of the anacharis alsinastrum.

Statistics of Excision of the Hip-Joint for Caries. By Dr. H. Leisrink, of Hamburg.—In this elaborate article, in which a score of cases from the practice of German surgeons make their appearance for the first time, Dr. Leisrink insists that excision of the hip-joint is a life-saving operation, if it be performed early enough,—his indication for it being caries as soon as evinced by the formation of abscesses. His statistics of the operation are interesting, and they show a higher percentage of mortality than any that have heretofore been published. An examination of the 176 cases shows 56 recoveries, 98 deaths, and 22 under treatment at the time they were reported, thus affording a mortality rate of 63.6 per cent. 85 of the operations were performed by German surgeons, with a mortality of 68.8 per cent.; 42 by surgeons of Great Britain, with a mortality of 28.5 per cent.; 29 by American surgeons, with a mortality of 48.3 per cent.; 16 by French surgeons, with a mortality of 75 per cent.; and 4 by Russian surgeons, with a mortality of 50 per cent.—*Archiv für Klinische Chirurgie*, Band xii, Heft 1, 1870.

Attention has lately been drawn, in several of the British journals, to the fact that sulphuric ether is used extensively by many of the people in the northern part of Ireland as a substitute for the ordinary intoxicating liquors.

Prof. Tardieu, whose connection, as a witness, with the trial of Prince Napoleon made him so unpopular with the students, has at length been allowed by them to resume the uninterrupted discharge of his duties.

Deaths of Distinguished Medical Men.—Following close upon the deaths of Simpson and Syme, we hear of that of Von Graefe, whose name is so intimately associated with the history of recent advances in ophthalmic surgery. He had been in failing health, we believe from pulmonary phthisis, for several years.

New Use for Hyposulphite of Soda.—It is stated that experiments made with this salt have proved it to be very superior for use for washing linen to the carbonate of soda now in use; it has no corrosive action, and does not cause a yellow coloring of the fabrics after some time. Borax, largely used in the Netherlands and Belgium, is a better substitute still, and by its use white fabrics assume an agreeable bluish hue, which, in many instances, renders the subsequent use of washing-blue unnecessary.

The M'Boundou, or Icaja, a Poison in Use at Gabon.—MM. Rabuton and Peyre report in the *Comptes Rendus* that, at Gabon, a French settlement on the west coast of Africa, there is in use a vegetable poison locally known as *m'boundou*, or *icaja*. That substance is the root of a plant which is not further specified. The authors have been experimenting with this substance, which, even in very dilute decoctions, is very bitter, and appears to contain one or more alkaloids, since the aqueous decoction is largely precipitated by iodide of potassium, and also by phospho-molybdic acid. The poisonous effects of this substance bear some similarity to the effects of brucia, but the authors state that, under certain conditions, this poison does not hurt men. Some of the lower animals are readily killed by it; a dose of 3 milligrms. of the alcoholic extract, placed under the skin of a frog, kills it; and rabbits and dogs are killed by doses of from 15 to 25 centigrms. of the same extract introduced into the stomach.

How to Water the Streets.—In a recent number of a French chemical journal a writer, M. Ch. Méne states that, of the two deliquescent salts which have been applied for this purpose—viz: the chlorides of magnesium and calcium—the last named suits best, the quantity being adjusted at 250 grms. per square meter. It appears from this paper that, in 1860 and 1863, the Place Bellacour, at Lyons, was (experimentally, and during great heat,) watered with a mixture of chloride of calcium and commercial hydrochloric acid properly diluted in water, the effect being highly appreciated by the inhabitants, also on account of the perceptible purification of the air.

The *Journal of Obstetrics and Diseases of Women and Children*, published in New York, will be supplied to the subscribers to this journal at $3.00 per annum from May, 1870, to May, 1871. The entire three volumes, three years, from May, 1868, to May, 1871, for $8.50. This journal is most ably edited and is worthy of a liberal support.

EDITORIAL.

"Nullius addictus jurare in verba magistri."—HOR.

A Double Number.—As the subscribers to the Journal will receive this month a double number, a few words must, in justice to them, as well as to the editor, be made in explanation. For the first time since the establishment of the Journal, in the autumn of 1865, the editor has been so much prostrated by protracted illness as to render it impossible for him to insure the prompt and consecutive publication of the work. Conducting the Journal for five years without capital, and almost entirely unaided in both the literary and laborious business departments of the work, it may be well understood that it has required so much protracted mental and physical toil as to often overtask the energies and strength of any one. Still, the publication of the work has always been made, and for five years the Journal has appeared with a regularity not exceeded, it is believed, by any similar publication in this country. With even comparative health this result has been accomplished, but with the extreme prostration caused by protracted illness, this has been impossible, and the issue of the Journal has been delayed for several weeks.

Since the middle of August the editor has not been able, until the present month, to attend to any business requiring mental or physical effort, without causing thereby serious suffering; other causes, dependent solely upon his illness, have contributed to the delay in publication, but these causes have, of course, with convalescence, disappeared. It will, therefore, be seen that these few explanatory sentences are justly due, both to the supporters and publisher of this work. Such arrangements are being made, in the event of future illness on the part of any one chiefly instrumental in the management of the Journal, as will insure its prompt and punctual publication. So much for necessary and proper explanations to those entitled to receive them. What of the results of this delay?

A friend of the editor remarked to him, with great seriousness, and with the sincerest interest, "This delay will injure you and the Journal severely; many have spoken to me in regard to it." The reply was instant and instinctive: "You do the subscribers to this Journal gross injustice. Do you suppose, after a few words of proper explanation to them, that instead of feeling a natural sympathy for one who has served them faithfully for five years, and who has been overwhelmed suddenly by illness and its consequences, they will, upon the receipt of these delayed numbers, entertain any other feelings than those of regret for the cause of this delay, and entire satisfaction in regard to the explanations made in reference to it?" The reply was: "I feel perfectly satisfied, of course, but I fear other friends of the Journal will not." The speaker was one of a noble nature, and a large heart, yet it is not believed that any friend of the Journal has not nobility of nature and honesty of heart sufficient to feel otherwise than he does. The result of this delay of a few weeks with the friends of the Journal is regarded, therefore, by the editor with entire confidence. The result of this delay with the enemies of the Journal is regarded with no less confidence.

It has devolved upon the editor to write much that was unwelcome to those whose course to the profession was unwelcome. Facile and indiscriminate eulogy, so common and so contemptible, has certainly not been the policy of this Journal. When gall, therefore, has been administered where honey only was expected and usually given, it is not surprising that the receiver of these draughts should make wry faces at the prescriber, and indulge in expletives more forcible than polite, and yet more amusing than forcible. That such persons, during the past few weeks of delay in the issue of the Journal, should have been, in the vile phraseology of the *Daily Press*, "jubilant," is to have been expected; but these individuals have never done this Journal any harm, and are powerless to do so. It is therefore believed that, on account of the kindness of the supporters of the Journal, and from the impotence of its defamers, this delay of publication will not have wrought any other results than a harmless suspense on the part of the subscribers, and a consecutively prompt publication on the part of the editor.

A Noble Response to a Severe Test.—There is, perhaps, no more beautiful illustration of nobility in the human race than is to be found in the following anecdote of the late Sir James Y. Simpson: He had promised to an editor manuscript, to be delivered at a certain time. When the period named arrived, the editor sent to Sir James for his "copy." Whether from inadvertence, or some other cause, it was not ready. Now came the moment and the trial to test the character of the man. What did he do? Did he send an apology, or, what would have been inexcusable, did he say nothing more than he had not done the work? Sir James had, at this time, the heaviest practice in Edinburgh, in addition to his duties as a teacher, and his labors as an author. What did he do? Did he allow the editor (who, trusting him implicitly, had made no arrangement for the work,) to suffer, either physically, mentally, or pecuniarily? When asked for the manuscript it was bed-time, and he had just completed the arduous labors of the day, but sooner than fail, or cause others to suffer, he wrote throughout the whole of that night. On the next day, he discharged, unaided, his entire duties, and reached home late at night; going to his desk, he wrote the whole of the second night. On the third day he again completed his duties; on the third night he returned faithfully and true to his work, and during this, his third night of sleepless toil, he completed his task, receiving no compensation, other than the glorious consciousness that he had performed a noble, heroic action, and had saved his friend from disappointment and pecuniary injury.

Editors alone, who have had, whether sick or well, to discharge wearily and heavily the promised work of others, can fully appreciate the true nobility of character which such an act immortalizes in the life of this noble man.

BOOKS AND JOURNALS RECEIVED.

The Archives of Ophthalmology and Otology. Vol. I, No. 2. New York: W. Wood & Co. 1870.

Robert Clarke & Co.'s Catalogue. Cincinnati: R. Clarke & Co. 1870.

Annual Announcement of the Woman's Hospital Medical College. Chicago: Robert Fergus' Sons. 1870.

Man's Power over Nature. Read before the Ind. State Med. Society, May 17, 1870. By Geo. Sutton, M. D. Indianapolis: J. G. Doughty. 1870.

Announcement of the Maryland College of Pharmacy. Baltimore: J. W. Woods. 1870.

Price List of Chemical Apparatus. Cincinnati: 1870.

Annual Announcement of the Savannah Medical College. Savannah: G. N. Nichols. 1870.

Annual Announcement of the University of Michigan.

Annual Announcement of the National Medical College. Washington: 1870.

Valedictory Address. By John Ordonaux, L. L. B., M. D. Washington: Judd & Detweiler. 1870.

Annual Report of the "Retreat for the Insane." Hartford, Conn. 1870.

Transactions of the W. Virginia State Medical Society. Wheeling: Frew, Hagans & Hall. 1870.

Constitution and By-laws of the Medical Society of the District of Columbia. W. H. Moore. 1870.

Valedictory Address to the Graduating Class of Jefferson Medical College. By J. Aitken Meigs, M. D. Philadelphia: Collins. 1870.

Died.—In Fincastle, Virginia, November 10, 1870, Dr. Charles Williams, aged 64 years. Thus has passed away the high-toned physician, the amiable, kind-hearted man, the firm friend and Christian gentleman.

JOSEF SKODA.

Carl Rokitansky.

THE RICHMOND AND LOUISVILLE

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ORIGINAL COMMUNICATIONS.

"Qui docet discit."

ART. I.—UTERINE DISEASE AMONG THE LOWER CLASSES. By S. BARUCH, M. D., Camden, S. C.

It is not the object of this article to enter into a discussion of any differential characteristics, presented by uterine disease, in the poorer white and negro population, but merely to present a truthful picture of these diseases as they occur among this class of people, and to point out in what manner hygienic influences react upon the nature, and consequently the treatment of these affections. Thus we may, perhaps, add a small share to the mass of facts that are daily culled in the field of uterine pathology, by means of which this department of our science is now reaching that point of perfection, which the progressive spirit of all scientific investigation, in the present age, demands.

Works, monographs, essays, and discussions on uterine diseases are continually multiplying, and the extremely contradictory nature of opinions held by specialists, in this department, has given rise to much acrimonious discussion. One maintains the exclusively local nature of uterine diseases, another discards it altogether, and traces these affections to a general *vis morbida* among whose sequelæ uterine troubles are prominent. One writer claims uterine ulceration as the "*fons et origo*" of all uterine affections; another affirms that these are secondary phenomena, consequent upon a diminished flow of natural excreta, or an increased secretion of vitiated fluids; one asserts that displacements and flexions are the great evils to be contended against, while another views these lightly and considers subdual of existing congestion and inflammation may be relied upon to remedy the whole train of painful symptoms which accompanies these displacements. Opinions, on the latter subject, are so diametrically opposed, and held by men of such acknowledged ability, that they will serve as an example. Thus, while Velpeau held that nine-tenths of cases of uterine inflammation are due to displacements, Bennet contends that seven-eighths of the displacements met with, may be traced to uterine inflammation. Hence, the tyro in this department of medicine is vacillating upon a sea of conflicting elements, from which the beacon-light of experience alone rescues and guides him to the truth, and teaches him that there is no absolute doctrine of uterine disease, but that these affections are to be rationally dealt with on the same sound pathological principles which guide us in the study of other affections.

The uterus is an organ, which, with its appendages, performs a most vital function in the human economy; an organ, whose nervous and vascular relations place it in intimate connection with nearly every portion of the female economy; whose derangements, however, are subservient to the same modification as other maladies.

Hence it is that the condition of poverty, with its attendant hygienic evils, impresses itself very perceptibly on the forms and treatment of uterine disease.

It is really surprising, how extensively prevalent is this class of affections among the poorer whites and the negro population of the South. But, on close scrutiny, we are rather inclined to wonder that the number of uterine cases is not still larger. The chief points in the etiology of these affections, among the destitute, are:

1. *Ignorance of the laws of nature, whose infringement is so often followed by deplorable consequences.* After parturition and abortion, these people often recklessly leave their beds ere the uterus has even begun to return to its former tone and condition. While yet all the ligamentous and other connections of the uterus are in a lax state, this organ rendered bulky on account of its non-involution, is allowed to seek a support as best it may, against the lax vaginal walls and floor of the pelvis, thus stretching the ligaments and incroaching upon neighboring organs. Ignorance permits these people to consider the pains and feelings of discomfort that ensue, to be the natural result of the parturient state. They enter upon their domestic duties and continue fulfilling them, until the parts become somewhat accustomed to their anomalous position, while the poor sufferers are too deeply absorbed by the stern necessity of gaining a livelihood, to heed symptoms which nature sends forth as monitors. Thus they go on, from bad to worse, until they are forced to consult a physician.

2. *Criminal abortions, a frequent cause of uterine disease among this class of people.* Often are the women terribly punished by outraged nature for this heinous crime. Their habits of depravity and immorality, the beastly propensities which obtain among a large number of them, make abortion a frequent occurrence, and thus a habit is frequently established that soon makes terrible inroads upon the constitution. It is a most important desire among many of them to conceal the evidences of their shame, and they seek to avoid detection by evading confinement to bed and at once entering upon their regular daily habits, even after severe flooding and consequent prostration.

About two months ago I was called to see a young woman, white, unmarried, and laying claim to some respectability. For some time she had consulted me occasionally on account of uterine troubles, but would never consent to an examination. Suddenly she was taken ill and I found that she had been flooding profusely. Insisting upon an examination I found what I took to be a small portion of placenta, besides other evidences of recent parturition. She stoutly denied having been pregnant, but declared that hers was indeed a strange affection, for she "*had passed, all of a sudden, about a gallon of clear looking stuff*," which was succeeded by hæmorrhage. As I was about to communicate my suspicions to her sister, the latter told me that she, too, had been deceived, that the patient had indeed been pregnant about four months and had now miscarried, without exciting her suspicion, as she had been in the field working. On her return home she found the "dead baby" behind the barn, barely covered over with leaves and dirt. Although I cautioned the patient most emphatically, to keep her bed for at least one week, she returned to her duties and was carrying water on the following day. This great exertion, for such it must indeed have been after a severe hæmorrhage, was doubtless undergone for the purpose of allaying the suspicions of neighbors. This is a typical case of many. What is the result? Involution does not occur at all, an inflammatory state of the uterus and its appendages ensues, these remain abnormally large and the patient drags her weary life to a miserable end.

3. *Want of cleanliness.* That condition of the mucous membrane of the uterus and vagina which gives rise to leucorrhœa is often brought on in this class of people by inattention to the cleansing of the body. The heat of our summer months relaxes their system, and frequently there is induced a catarrhal condition of the uterine and vaginal lining membranes, which, by accumulation of secretions, gives rise to ulcerations.

4. *Insufficient and improper food and clothing, and mental depression* are influences that tend to weigh down the constitutions of the poor and desolate, arousing a morbid diathesis, which is the starting point of multifarious mala-

dies, but of none more often than the class of diseases now under consideration.

5. *Exposure to vicissitudes of weather is a prolific cause of certain forms of uterine disease, differing somewhat in their nature from those already referred to.* The urgent necessity for earning a livelihood prompts these people to disregard their conditions, and often we see them wading streams, working in the rain, or going into the fields yet covered with heavy dews, while the menses are in active flow. What is the result? The functions of the uterus are interfered with, checked; inflammatory symptoms ensue: we have now a subacute metritis, which lays the foundation, if not properly managed, as is but too often the case, for the most intractable tissue alterations, with all their painful symptoms.

6. *Venereal diseases.* The most intractable uterine affections I have met with, have been caused by gonorrhœa, especially when the urethra is not simultaneously attacked. These women are either not aware of the disease or pay no attention to it. If they desire to be treated they generally intrust their cases to old negroes and other quacks that abound in the country. Thus it happens that the venereal disease has usually continued a very long time or been aggravated by irritating applications of copperas and bluestone and strong decoctions of vegetable astringents, when the physician is sought. The specific inflammation has now gradually extended to the cervical lining membrane and thence to the inner cervix and cavity of the corpus uteri. Now we have a form of uterine disease that often resists the most faithfully conducted treatment. Although the mucous lining is at first alone attacked, the persistence of the specific inflammation induces effusion into the submucous tissue, whence it extends into the parenchyma of the organ, greatly enlarging it, and after long continuance of the malady, the uterine cavity is very much enlarged also. I have seen one case in which Simpson's sound entered about six inches.

Having now detailed the most prominent part in the etiology of uterine disease among the lower classes, I will not long dwell on the symptoms, as these are familiar to all physicians who have any experience in this class of affections. At first the symptoms are clearly referable to the sexual organs, but frequently, in cases of long duration, we find the general system so completely overwhelmed that gastric, hepatic, and renal complications, with neuralgias and hysterical pseudo-maladies divert the attention of a superficial observer from the true source of all these evils.

Again, when the symptoms are confined to the pelvic organs alone, we are often deceived by the prominence of some symptoms, such as lumbar pains, pointing to lumbago; or constipation with small fecal dejections, suggesting stricture, or other diseases of the rectum; great dysuria, indicating vesical trouble, etc.

A careful and thorough investigation of such cases is imperatively demanded, and will usually be rewarded by success.

There are, however, two symptoms which have occurred to me more frequently in this class of patients, and which point more plainly to certain conditions of the uterus. Menorrhagia is a frequent accompaniment of subinvolution, especially in patients of lax fiber. Often this is the most prominent symptom, which arouses the anxiety of the sufferer, and impels her to seek medical advice. If we introduce the sound in these cases, it will enter from three to six inches, sliding into the uterus with the greatest facility, quite unlike its entrance in cases of polypi and fibrous tumors.

Sciatic pains form another symptom, whose frequent occurrence induces me to consider them almost pathognomonic of that condition of the uterus which Simpson denominates superinvolution, and of such cases in which the ovaries are more or less painfully enlarged.

The pain extends downward from the inguinal region (mostly on the right side), along the course of the great sciatic nerve. In this manner we meet with most agonizing cases of sciatica, which resist all ordinary treatment, and appear to be the immediate cause of death.

I had, but recently, a sad illustration of this peculiar affection. The uterine symptoms had disappeared, such as discharge and bearing-down pains, and a small ulcer which had surrounded the os. Amenorrhœa and obstinate constipation alone remained to accompany the sciatica, which was confined entirely to the right side. The right leg was first swollen, and to some extent paralytic, then became atrophied, and remained to the end the seat of the most excruciating pain, which large doses of anodynes, by enema and hypodermic injection, alone could palliate. The patient died from sheer exhaustion. I have not yet been able to find an explanation for the constant occurrence of this sciatica on the right side in all of the few cases that have come under my observation.

The *prognosis* of uterine (non-malignant) diseases among the poor is not so unfavorable, as their unfortunate hygienic condition would lead us *a priori* to infer. If they can be induced to realize the importance of implicit obedience to our directions, their cases may most usually terminate favorably. Their intense suffering will, in many instances, compel them to heed our advice, but, unfortunately, they frequently abandon treatment so soon as amendment begins to ensue, and thus they but too often relapse.

The most unfavorable cases I have met with are those caused by extension of gonorrhœal inflammation, and that class of "superinvolution" accompanied by sciatic pains. Of the latter cases I have seen too few to form a reliable estimate of their prognosis, but in none of them have I yet met with a complete recovery.

Treatment.—In the management of these affections, whether in the better or lower classes, it should be our aim, as in all rational therapeutics, to divest ourselves of all ideas of specifics, local or systemic. The patient's constitution and hygienic condition require the most attentive consideration. Of equal importance, however, is a weekly examination per vaginam, and thorough attention to local troubles by local medication. The largest proportion of these patients present an anemic condition. Hence, iron, quinine, and strychnia is a favorite combination with me. About 5 grs. cit. quin. and ferri, and 1-24 gr. strychnia, in pill or solution, form an excellent formula, which has been of great service to me in these cases. Should the uterus be very much enlarged, I add the iodide, and sometimes the bromide of potassium. I generally use a cheap combination for the poor, of

℞.—Ferri Sulph. gr. 5.
Strychnia gr. 1-24.
Sul. Magnesiæ ʒss.
Acid Sul. dil. gutt. ij.
Iodid. Potass. grs. 5.
Aqua font. ℥ss.
Three times daily.

A more elegant, but more expensive, preparation would be the syr. iodide of iron, or Blancard's iodide of iron dragees.

At the same time (in subinvolution), I recommend the application of a large sinapism to the lumbo-sacral region every night, and painting the abdomen with tr. iodine until the irritation from these measures is considerable.

Cold vaginal douches are very useful when there are no inflammatory symptoms. In the latter case, the tepid or hot injection is far more grateful, and allays pain which the cold water would only increase. Enemata of cold water are beneficial, as they give tone to the recto-vaginal septum, and assist in keeping the bowels open.

It may not be improper here to note, that much of the success of injections depends upon the variety of syringe used. The ordinary glass female syringe is worse than useless; but the india rubber Davidson syringe is all that can be desired for efficiency, durability, and facility of application. It should be used in the recumbent posture. If the cervix is enlarged, with pouting lips, which is frequent in subinvolution of the uterus, occasional scarification, by radiating incisions around the os, is called for. For this purpose, I use a small, spear-shaped knife, mounted upon a hard rubber stem, which I procured from Tieman; N. Y. If the inner mucous lining of the cervix is congested, our incisions may be cautiously extended into this tissue, which generally bleeds freely. This must be followed by the weekly application of the nit. silver, solid or in solution. The latter is more applicable when there is much inflammatory action. In most instances it will be found that there is not much acute inflammation about the uterus, the condition present being mostly a sub-acute one. In these cases, the weekly brushing over of the cervix, within and without, by the nit. silver crayon, and semi-weekly introduction of a sound into the uterine cavity, will conduce greatly, together with the above-mentioned general treatment, to bring about involution. The scarifications should be repeated as long as inflammatory action is evident.

Should, however, much induration be present, owing to deposition of adventitious tissues, we must have recourse, occasionally, to concent. tr. iodine, or even potass. cum. calce may be necessary. I have never had occasion to use the latter in the class of cases under consideration.

If the disappearance of the discharge does not follow healing of the ulcers, erosions and congestions, astringent vaginal injections may be used, or, what is preferable, when patients can afford to procure them, medicated pessaries, made of wax and lead, in combination with alum, acet. lead, tannin, or sulph. zinc, alone or combined.

The subject of displacements has been a fertile source of argumentation, and it is not my province here to enter upon its discussion. I may, however, state that I have seen much injury done by the use of the old-fashioned and detestable sponge pessaries, as also the round glass globes, which some of these wretched people have worn for years, with increasing aggravation of symptoms. I have often seen displacements and prolapsus disappear after the uterus has been restored to a normal condition, but frequently the parts have become stretched, indurated, and somewhat fixed, so that it is necessary to have recourse to some artificial support. In these cases I have found the ordinary india rubber air-cushion, with a central aperture, more applicable than any other instrument. This is a cheap, cleanly appliance, which answers more indications than any one of the numerous pessaries to be seen in the instrument maker's shop. For prolapsus this is the most rational appliance; it is soft, yielding, and adapts itself to the part. The objection to these pessaries is their want of durability, as they collapse frequently. This may be obviated by purchasing the more costly inflatable, ring-shaped pessary.

ART. II.—DROPSY OF THE OVARIUM. Reported by WILLIAM PAWLING, M. D., to the Boyle County Medical Society, Ky., September 13th, 1870.

March 12th, 1864. I was called to visit Martha Lee, a colored woman, in consultation with Drs. McKee and Cowan. Dr. McKee was the attending physician. After a thorough examination of her case, we all agreed that her disease was dropsy of the left ovarium. She was very much emaciated and had a cachectic appearance. We were of the opinion that she had too much constitutional disease to bear the operation of removing the ovarium; it was also the opinion of each of us that she would ultimately sink under the disease. We, however, agreed that we would draw off the water which would mitigate her sufferings and prolong her life. Accordingly we met on the next day, the 13th, when Dr. Cowan drew off from the sack about two and a half gallons of turbid looking serum, which gave her great relief.

On the 11th of April, near a month after, I visited her again with Dr. McKee. We found her abdomen enlarging, as the water had again begun to accumulate. Her constitutional symptoms were no better. About this time her husband had joined the army and left for the front. Her father, Robert Owsley, removed her to his house. May

11th, he called on me and requested me to take charge of her case. I visited her occasionally until the 31st of May, when I again drew about the same quantity of water from her, which, as before, relieved her very much.

I continued to attend her until July 21st, when I found her suffering very much from the accumulation of water in the ovarium. Believing that she must sink from the progress of the disease, I determined to try an experiment on her. I tapped her again, just below the umbilicus, and drew nearly three gallons of water from her. I then enlarged the orifice with a bistoury, making it sufficiently large to introduce my little finger. I then made a tent, out of a soft cotton rag, about six inches long, twisted it so as to make it firm, pushed one end down to the bottom of the sack, leaving about two inches of the tent externally, applied a tight bandage around the abdomen below the orifice, also one above the orifice, put a plaster of basilicon ointment over the orifice and then put a slack bandage over the dressing. Every day, until August 30th, the tent was removed and the bandage tightened. Healthy looking pus passed freely from the orifice, intermixed with a little serum. The tumor gradually diminished in size, while her general health improved rapidly. On the 30th of August the sore was healed up and she was well.

I am aware that dropsy of the ovarium has heretofore been treated by letting the cannula remain in the orifice after drawing off the water, so as to excite inflammation, thereby causing the sack to close up and adhere, but this practice has generally been abandoned, because it did not prove more successful than the operation of removing the ovarium. But it will be observed that the treatment in this case was different from those cases, where the cannula was the instrument used to excite inflammation. The cannula would necessarily excite inflammation in the top of the sack, but in the case reported, the tent produced inflammation at the bottom and sides of the sack, while the orifice at the top was kept open until the adhesion from the bottom and sides was completed. Again, the patient in this case was so much reduced that there was no hope of a radical cure from any other method of treatment. I feel assured that had I adopted this treatment in some cases that proved fatal in my hands, some years since, I might have saved one or more valuable lives.

Art. III.—Incised Wound of Abdomen, Involving Duodenum and Liver Recovery. By J. J. Winn, M. D., Clayton, Ala.

James Idson, age 19 years, poorly developed, pale and delicate, was wounded in abdomen with a pocket knife on January 3d, 1867, at Hargrove's Mills. I saw him first about two hours after he received the injury. Upon examination I found a transverse wound, commencing one and a half or two inches above the umbilicus, and just to the left of the linea alba, and extending three inches to the right. Inspection of the viscera revealed a longitudinal incision of an inch and a half in the duodenum, about one inch below pyloric extremity of stomach. I also found in the thin margin of the left lobe of the liver a slit of about one inch. A portion of omentum, unwounded bowel and wounded border of liver were protruding through external wound; the contents of stomach, consisting of a recent meal, had escaped externally, being conducted outward by protruding omentum. After bringing the wounded intestine through external wound, I brought the incision in duodenum into *exact* apposition by interrupted sutures placed one-fifth of an inch apart; the last suture was not clipped, but brought through external wound. This done, the exposed viscera, after being carefully cleansed, were replaced in abdominal cavity, and external wound coaptated by suture and adhesive strips. In order to bring into apposition the wounded peritoneal surfaces of the bowels and abdomen, and particularly to prevent, as far as possible, any motion of the bowels, the free end of the unclipped suture was so secured to the surface of the abdomen by an adhesive strip as to hold the bowel firmly against the abdominal walls. A towel dipped in cold water was then applied over the seat of injury. After administering half a grain morph. sulph., and directing a repetition thereof as often as might be necessary to keep the patient quiet and comfortable, and particularly charging the nurse to suffer no exertion whatever, on the part of the patient, if he wanted the position of an arm or leg changed it must be done by an attendant, I returned to my office.

January 4th, 9 A. M.—Patient had taken one grain morphia since I left him, which caused him to rest quietly during the night. Reaction fully established. Pulse 106 per minute; a little hard and wiry. Considerable tympanites and slight tenderness of entire abdomen; decided circumscribed dullness in right iliac fossa; bladder much distended, which necessitated catheterism. Complained of intense thirst. Ordered the following:

℞.—Morph. Sulph. Ant. et Pot. Tart. aa. grs. 4.
Aqua, ℥8.

M. S. ℥ss. to be given every two, four or six hours, as pulse might demand.

I also directed ℥ss. cold water to be given every twenty or thirty minutes.

Jan. 5th.—Had taken five or six doses of the sol. left on yesterday; tympanites and tenderness both increased; thirst not so great; pulse, 110. Continued prescription and general directions of yesterday, and further directed as his sole diet ℥ss. of chicken water to be given every six hours.

Jan. 6th.—Tympanites has subsided; no tenderness except immediately around the wound, and in right iliac fossa, in which locality there is still marked dullness; likely caused by a coagulum as the result of hæmorrhage from the liver. Diet and prescription continued and ʒi. of fresh cream ordered to be alternated with the chicken water. Pulse 95, soft and compressible.

Jan. 7th.—Pulse a little wiry; otherwise natural. Patient cheerful, though expressed some fear of being starved. Prescription and diet continued; quantity of diet slightly increased. After this date the antimony was left off and no medicine used except opiates, sufficient to keep bowels locked. Union of external wound, by first intention, was complete, except the point occupied by the unclipped suture. On the eighth or ninth day after the operation it was discovered that this unclipped suture was detached from the bowels, when I removed it from the wound. No additions to his diet were allowed until the 14th inst., when milk and rice were directed. On the 18th inst. his bowels were moved by enema; the first motion allowed after reception of injury. I dismissed the case on the 19th inst., fully convalescent.

Dec., 1869.—Jas. Idson since the above accident has enjoyed good health, and is at this time in the employment of the stable-keeper at this place.

ECLECTIC DEPARTMENT.

"Carpere et colligere."

Art. I.—Treatment of Syphilitic Disease. By John K. Barton, M. D. (Dub.) F. R. C. S., etc., Surgeon to the Adelaide Hospital; Lecturer on Surgery in the Ledwich School of Medicine, etc., etc.

The principles upon which the treatment of syphilitic disease should be conducted, are sufficiently simple, yet, if I may judge from cases which have come under my own observation, they are not as generally recognized, or as universally acted upon, as their importance demands. In these principles I do not include the use of any particular therapeutic agent, but simply the general rules which a knowledge of the natural course of the disease, and of the effects produced by certain medicines on the symptoms, have enabled us to arrive at; these form a safe groundwork upon which to determine the line of special treatment for adoption in any particular case. In the following pages I purpose drawing the readers' attention to these principles, and illustrating their practical utility by cases, in some of which the same remedy (mercury) will be seen to have produced, when given upon a *wrong* principle, aggravation of the symptoms, with great deterioration of the general health, and subsequently, when given upon *right* principles, marked improvement of the general health, and a disappearance of the symptoms.

Before entering upon this subject, I am compelled by some observations made in a recent communication in the pages of this journal, briefly to refer to the well worn controversy concerning the distinction which exists between the three forms of venereal disease. The conclusion sought to be drawn from some of the cases referred to in this communication is such as, if adopted, would throw us back into the uncertainty and confusion from which, thanks to the labors of many independent observers at home and abroad, we have recently emerged. The conclusion to which I refer is thus expressed: "On referring to the accompanying tabulations, it will be seen that, as a rule, all sores, whether soft or hard, were followed by constitutional signs." Upon referring to the tables as directed we find a certain number of cases in which it is stated that characteristic soft sores existed at the time of admission, and in which subsequently syphilitic symptoms became developed.

Admitting the facts to be as stated, and admitting also, which is not, however, at all proved, that in some at least of these cases the syphilitic symptoms which appeared, were not the return of old symptoms, but the first sign of constitutional infection; still the question remains, what proof is there to show that these sores were the initial lesion of the syphilitic symptoms which followed? There is no proof, for there is no mention made of any examination with the speculum to ascertain the possible existence of other sores; nor is there even any careful account of the time which elapsed between the development of the sores, and that of the syphilitic symptoms.

In the absence of all such data there are three ways of explaining the facts recorded in the tables, and it will be admitted we are bound, in endeavoring to explain any phenomena, to adopt the most reasonable and likely, not the most unreasonable and unlikely solution of the difficulty.

The *first* explanation which suggests itself at once is, that these "soft sores" had nothing whatever to say to the syphilitic symptoms, being another disease which prostitutes, in the constant habit of promiscuous intercourse, were, to say the least of it, not unlikely to contract, in addition to a syphilitic sore, which they either had not noticed, or, having noticed, considered of no consequence; but which trifling sore was really the initial lesion of the subsequent symptoms. If this explanation be objected to in any instance, the facts before us admit of a second explanation equally satisfactory and probable, and involving no difficulty, which is, that in some cases the "soft sores" were true syphilitic chancres, in which the sign of induration was wanting at the time of observation, for it is well known that *induration*, however valuable a sign when present, is not to be looked upon as absolutely necessary to the syphilitic chancre; and indeed for this reason the names of hard and soft as applied to the infecting and non-infecting sores are very objectionable; but in the tables in which these cases are given, the sores are simply described as "soft sores," or a "number of soft sores," the other signs of *surface*, *secretion*, etc., being altogether omitted. It seems probable that in some of the cases the former and in others the latter explanation was the true one.

The author of these tables, however, adopts a very different explanation of the simple phenomena there stated, which is—that these "numerous soft sores" were examples of what is commonly called the local venereal sore or chancroid, which, indeed, is very likely; but—strange conclusion—that the secondary syphilitic symptoms followed from them. I have shown that there is not the slightest necessity for any such conclusion, as the cases admit of ready explanation without it; but if adopted we must at once pronounce all the careful and laborious researches which have been made upon this subject, since Bassereau, in 1835, began his observations, up to the present time, to be altogether wrong, and this rather than admit that a certain number of women in the nightly habit of prostitution might have two kinds of venereal disease at the same time.

I leave the reader to adopt whichever of these explanations he thinks most reasonable.

Syphilis in any of its stages may present difficulties of *diagnosis*; but more frequently in its later stages is this the case. The plan generally taken in such cases is to make a minute inquiry into the antecedents of the patient, and the diagnosis is formed very much upon the information thus acquired. This appears to me to be a grave mistake, and one which very often leads the surgeon into error. To found a diagnosis in any case upon the history of his symptoms, as given by the patient, is always dangerous, but much more so in syphilis than in other diseases, for so chronic is the disease and so various the symptoms it produces, that the patient may readily deceive himself and the surgeon consequently who trusts to what he tells him.

Under any circumstances of difficult diagnosis, I am convinced that our efforts should be directed almost exclusively to a careful, and if necessary, a repeated examination of all the signs, which the skin, nails, hair, mucous membrane of the mouth and fauces, etc., will present, rather than rest any weight upon the history given by the patients. For obvious reasons some patients will deny the possibility of their having contracted syphilis, while others will unintentionally mislead in the opposite direction. Several cases have come under my observation in which the patients have given a history of primary sores, followed by an eruption, which, upon closer investigation, turned out to be a rash produced by copaiba, or an ordinary skin affection (scabies, exema, or purpura). On account of this double source of error, I view with suspicion any diagnosis founded upon the previous history. *The signs which we ourselves have an opportunity of observing, are the only reliable grounds of a diagnosis in any difficult case,** and by carefully noticing them we will always be able to come to a definite conclusion, and either confidently enter upon treatment, or on the other hand dismiss the subject of syphilis from our patient's mind.

I have elsewhere† stated my views of the *treatment* of syphilis; these views have been confirmed by more recent experience, while at the same time I am convinced that in order to make a change in the old method of giving mercury rapidly and in large quantities for syphilis, it is necessary to insist upon the principles which should guide us.

The first general rule or principle of treatment which I would suggest, is, that our *object* should be to remove all existing symptoms as completely as possible, *not* to drive out the virus from the system; the virus we only know by its effects, and there is no proof whatever that the virus is directly influenced by any treatment.

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*I find other surgeons have adopted a similar rule. M. C. Forster says—"For many years I have enjoined my reporters only to note down what they see."—Guy's Hospital Reports, 1870, p. 162.

†Syphilis, etc., chap. ix., page 200, etc.

There is, however, very good reason to believe that the virus is in a large number of cases really eliminated from the system, after the lapse of a considerable interval of time, during which its presence in lessening activity is seen, and there can be little doubt that by removing the symptoms we indirectly aid in this elimination, so that while we confine our treatment to the removal of existing symptoms, we are accomplishing, as far as treatment can, the purification of the system; but this must not be the object we propose to ourselves or our patients. When the symptoms have totally disappeared we have no other safe guide; but might, with the theoretic object of freeing the system from the virus, persevere indefinitely to the destruction of the patient's health, and after all be disappointed by finding a new batch of symptoms appearing when his cure was pronounced complete.

Experience, I think, however, shows that while our object must be simply the removal of the symptoms, yet that in order to do this satisfactorily, that is, to prevent, as far as possible, *a return* of the symptoms, we must persevere with treatment for some weeks after all signs of the disease have disappeared; this is not necessary in all cases, but in the majority, especially such as are in the second stage, this is a wise and useful precaution.

The second general principle is, that whatever therapeutic means we employ should be used in a gradual and general manner, in contra-distinction to the active and energetic use of the same drugs. The reason of this is that syphilis is essentially a chronic disease; its symptoms are gradually developed, and continue for a length of time, gradually disappear, and are followed after an interval by another set of symptoms, which pursue a similar course. That a remedy which acts energetically and rapidly upon the system can not successfully combat such a disease requires no argument, and yet such a method of treatment is, in fact, very generally adopted, with the result, as some of the following cases will show, of rendering the disease more intractable, while the health of the patients becomes much deteriorated. The rule that an acute disease requires an active remedy, while a chronic disease will only yield to a slow remedy, is generally accepted. There is no disease with which I am acquainted, in the treatment of which this rule should be more carefully borne in mind than in that of syphilis, not only from the essentially chronic character of the disease, but from the fact of the medicine which possesses the greatest power over its symptoms, and is generally employed in its treatment, being *mercury*, which metal, when introduced into the system in too energetic and rapid a manner, is capable of doing as much harm as, on the other hand, when used in a cautious and discriminating manner, it is powerful for good. There can, I conceive, be no doubt that by means of mercury the effects of the syphilitic poison in the system may be counteracted to a very great extent, the duration and severity of the disease mitigated, and life saved when vital organs are attacked, and yet the non-mercurialist may boast that his cases on the whole get on quite as well, and some of them very much better than those under the care of practitioners who employ mercury. In an average of a large number of cases treated with and without mercury, I believe there would be found no great difference either in duration or severity of symptoms, and the reason I am convinced is that on the mercurial side the cases which are improved and relieved by mercury, judiciously administered are counteracted by those in which it has been used in too active and energetic a manner, so that if this second general principle is not attended to, it would be much better not to give mercury at all.

Salivation should never be induced in the treatment of syphilis; all the good effects of the drug can be obtained without this, the poisonous effect of the metal upon the system. Not only is the patient injured by the depressing effects of mercury when pushed rapidly on to salivation, but the syphilitic symptoms remain unaffected by this active use of the drug. So that it is always a most unfortunate circumstance should a patient become salivated, and one which we should guard against by, in the first place, using mercury, especially at first, very cautiously and in small quantities, and also by examining our patients frequently, for some are very susceptible. The best means of giving mercury so as to fulfill the indication of introducing it gradually into the system, and avoiding salivation, is, I believe, by means of inunction; ten or fifteen grains of mercurial ointment carefully rubbed in daily will do more for the relief of the symptoms than could be credited by those who are accustomed to give it freely to the mouth. Inunction is much the best means to employ in the early stages of the disease, but in the later stages very often it is necessary to give mercury in combination with iodide of potassium, and then either the biniodide or bichloride may be given in doses of the twelfth of a grain, and the metal will then act in the gradual manner required. The following cases prove the importance of due attention being given to this principle of the gradual introduction of the remedy by which we propose to influence the symptoms of syphilis.

CASE I.—Syphilis in its second stage, treated at first by the rapid introduction of mercury into the system, which, while injuring the patient's health, failed to remove the symptoms—Subsequent gradual treatment, followed by complete removal of the symptoms and restoration of the patient's health.

J. R., a clerk, came under my observation upon the 3d of December, 1869. He was then profusely salivated; bloody saliva flowed constantly from his mouth night and day; he could with difficulty swallow even drinks. He was bathed constantly in a cold sweat, his pulse being rapid and weak. The syphilitic symptoms were a papular eruption, well marked on the face, arms, and neck, enlarged cervical glands, pains along both tibiæ, which were worse at night.

He had contracted the disease in August, and the eruption had appeared, he stated, during the following month. He was at this time in the country. The surgeon whom he first consulted gave him "potash," and he thinks a little mercury, when the eruption and other symptoms became somewhat better. He came to Dublin about business, and then consulted a medical man, who prescribed pills for him, one to be taken three times a day, and after a few days, fearing one of his eyes was becoming inflamed, gave one every four hours. At the end of the week salivation was established, with all its attendant evils, while the eruption and other symptoms remained the same as they were before this active treatment was commenced.

When this patient came under my care, the treatment was necessarily entirely directed to the relief of the salivation. Four grains of quinine were given every four hours, while a chlorate of potash gargle was constantly used to wash the mouth; fluid nourishment was given every four hours. In about a fortnight he was recovered so far as to eat solid food; and then left for the country. I saw him again early in January; he had then quite recovered from the debilitating effects of the salivation, and appeared in good general health. *The syphilitic symptoms remained as well marked as before.* I now considered him in a suitable state for treatment, and commenced at once with the inunction of half a drachm of mercurial ointment once daily, a mixture containing three grains of sulphate of quinine in each dose, being given twice a day. After a fortnight's steady perseverance in this treatment the eruption was manifestly decreasing; the inunction was then reduced to fifteen grains daily. Upon the 8th of February, after a month's treatment, the following note was taken: "Papules scarcely perceptible on the forehead, where they had been very marked; eruption on arms and back nearly disappeared; the papules which remain are scaly; slight enlargement of cervical glands still on one side; no pains or other symptoms; general health very good; has not been a day from business since he returned to town; no symptoms of salivation." By the end of March all the symptoms had completely disappeared, and the treatment was discontinued.

Case II. (Reported by Mr. Arthur Ringland.) Syphilis in its tertiary stage—Salivation produced upon five different occasions without relief to symptoms—Complete removal of symptoms and restoration of general health by gradual treatment.

A. P., a widow, about thirty years of age, was admitted under the care of Dr. Barton, into the Adelaide Hospital, upon the 12th November, 1869; her condition was then as follows: An eruption of both dry and ulcerating tubercles was scattered over the body and limbs; one ulcerating patch upon the back and another near the left wrist-joint were each as large as a five shilling piece; the surfaces of these ulcers were covered with a dirty semipurulent discharge, their edges red and everted. Several large white cicatrices marked the situations where similar ulcers had healed. Severe pains were felt in both arms, legs, and head; in the latter the intensity was such as to resemble that of severe neuralgia; all these pains were worse at night; the pains along the tibiæ and about the ankles and knees were much increased by standing, so that the patient could scarcely bear to put her feet to the ground. Her hair had fallen to a great extent, and was still falling.

Previous History.—Two years before, her husband had sores on his lip, and she got a similar sore on her upper lip from him; this sore ulcerated, and was followed by a cutaneous eruption, which, commencing on the face and head, spread over the entire body. The throat became very sore about the same time; this was followed by inflammation of both eyes, from the effects of which her sight remains impaired to the present time. When the eruption first appeared she was placed under the influence of mercury and salivated. She was again salivated, when her eyes became inflamed; when these got better the eruption, pains, sore throat, etc., remained; for these she was given mercury again, and subsequently, in the hands of other medical men, she was salivated twice, so that altogether she has been salivated during the past two years five times, and yet she states the symptoms of the disease are as bad now as ever. The patient was emaciated, and had all the appearance of one worn out with loss of sleep, pain, and depraved digestion, and expressed herself as almost despairing of relief.

As the periosteal pains were the most distressing symptoms, and those which deprived her of rest and kept up the irritative fever, her treatment at first consisted in eight grain doses of iodide of potassium, four times in twenty-four hours, with Dover's powder at bedtime. In about three days there was a decided relief from pain; the mixture was then changed to one containing the twelfth of a grain of biniodide of mercury, and five grains of iodide of potassium in each ounce of decoction of cinchona bark; of this she took one ounce three times a day. She was placed on meat diet with some wine; ordered to take a hot-air bath twice a week, and to have the ulcers fumigated with calomel.

Under this treatment the patient steadily improved in every respect, her general health being restored *pari-passu* with the disappearance of all the syphilitic symptoms. The ulcers soon put on a healthy appearance, but their cicatrization was very slow. After all other symptoms had quite disappeared the ulcer on the back and that on the left wrist still remained. After about five weeks of treatment the patient's improvement was so decided as to attract the attention of all who had seen her when first admitted, and to elicit from herself the remark that she never expected to be so well. About the middle of December this patient was attacked with shivering and pain in the right side, which proved to be due to diaphragmatic pleuritis, which soon spread to the lungs, and her life was in imminent danger. The right lung becoming solid without at the same time any expectoration, with the assistance of my colleague, Dr. Little, this serious complication was, however, overcome, and the patient made a good recovery. She left for the Convalescent Home, Stillorgan, upon the 21st of January, the syphilitic symptoms having entirely disappeared, and her general health being better than it had been since she contracted the sore upon her lip two years previously.*

CASE III. (Reported by Mr. Arthur Ringland.) Tertiary signs two years and a half after infection—Salivation without removal of symptoms—Great general cachexia—Symptoms removed, and general health restored by treatment without salivation.

William De C., nineteen years of age, was admitted into hospital upon the 18th December, 1869. He presented the following group of symptoms: Tonsils and palate bore the cicatrices of former ulceration, and were still red and inflamed looking. Spots of a dark coppery color were scattered over the face; several cicatrices of rupia existed over the shoulders and back.

Upon the upper and inner part of both legs, near the knees, existed two large ulcers, the one upon the right leg being the largest, and being about the size of a five shilling piece; the edges of these ulcers were not undermined, but the skin around them was of a dark coppery hue; the surfaces were covered with a dirty looking grayish exudation. He complained of nocturnal pains in his head and legs, so severe as to deprive him altogether of sleep. Upon the top of the glans penis existed the cicatrix of an old sore; the glands in both groins were enlarged and indurated; his tongue was white; there was a complete loss of appetite; he was emaciated, and his skin had a yellowish dry look.

Previous History.—About two years and a half before his admission to hospital he first noticed a single sore upon the glans penis, the mark of which still exists; this was followed shortly by an eruption upon the forehead. He then sought for medical advice; the surgeon whom he consulted cauterized the sore, and subsequently, the eruption having spread all over his body, placed him under the influence of mercury. He became severely salivated, but states that the eruption continued without much change for four months. He now began to drink rather freely, and became infected with gonorrhœa; this was followed by his present symptoms of great general debility, and by the appearance of the syphilitic symptoms which he presented upon admission.

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* This patient presented herself again at the hospital in March last, and exhibited two ulcers, about the size of a shilling, each upon the scalp. Her health was failing; she had been leading a drunken and irregular life. She was admitted, but when she came to the hospital in the evening she was so drunk as to make it necessary to cancel her admission.

The *treatment* adopted was, internally, eight grain doses of iodide of potassium, with the one-sixteenth of a grain of biniodide of mercury, in an ounce of decoction of cinchona bark, three times a day, a mercurial vapor bath every second day, ten grains of calomel being used each time, the ulcers dressed with charpie soaked in black wash; full diet. For several nights after his admission scarcely any sleep was obtained, but he expressed himself always relieved by the baths, and the ulcers began at once to show a more healthy edge and surface. A steady perseverance in the treatment was, however, soon followed by a gradual improvement in all his symptoms; the eruption disappeared, the ulcers healed, the nocturnal pains subsided, and at the same time natural sleep and appetite returned; not the slightest symptoms of salivation appeared. The treatment was continued with but slight alteration until the beginning of February, when, being free from all signs of disease and feeling well, he left the hospital. He has been seen occasionally since that time, and he stated he was free from any symptoms such as he had suffered from when admitted.

CASE IV.—(Reported by Mr. Samuel Knaggs.)—Tertiary stage—Cerebral symptoms—Acute headache—Loss of sight—Loss of memory—Complete recovery.

J. C., a respectable married woman, forty-one years of age, applied at the Adelaide Hospital in October, 1868. She then had a gumatous tumor on the thigh; four years previously she had contracted syphilis from her husband, and had ever since been suffering from various symptoms of the disease. She had been for several months in Dr. Stevens' Hospital; when better she went out, but subsequently, when the symptoms returned, she placed herself under Mr. Hamilton's care, who salivated her; still her symptoms continued with short intervals of apparent health. She did not come into hospital at this time, but was treated as an out-patient. Upon January the 4th, 1889, she presented herself with a fresh train of symptoms, and was then admitted. She now complained of intense pain of the head, like a tight band; she compared it herself to a feeling as if a red-hot iron circle was tight round her head; both eye-balls were the seat of acute pain; the sight was very defective; flashes of light and *muscæ volitantes* were constantly before her; light could not be endured. Her memory appears to have been defective previously, but it was at this time much worse; recent occurrences seemed to her to have happened "centuries ago;" can not remember anything; and says she has "spiritual and temporal delusions." The intense pain continued for more than a week after she was admitted, although every expedient, including large doses of iodide of potassium, was used to relieve her; any effort of mind, such even as the attempt to answer a question, increased the pain. Blisters were applied at the back of the neck and behind the ears, and the twelfth of a grain of biniodide of mercury, with eight grains of iodide of potassium, was taken four times daily.

A slow but steady improvement began after this treatment had been in force about two days; first, the pain began to abate in intensity, then the dread of light diminished, then the flashes and muscæ disappeared, and slowly the memory and capacity of mind returned. She remained about two months in hospital, during the whole of which time she continued taking the medicine. She then went to the Convalescent Home for about six weeks, and took the same medicine at intervals, a week being allowed to pass between each repetition of the bottle; all tendency to a return of her symptoms seeming then to have disappeared, at the end of about three months she discontinued the medicine. I have seen her within the last few weeks, and she tells me she has remained perfectly free from any symptoms of her disease whatever, and is able to support herself, filling the situation of housekeeper, but her memory is treacherous and defective.

Those who oppose all mercurial treatment would find in the early history of each of these cases ample grounds for the support of their views. We can, I think, hardly doubt that, had these patients been treated on a non-mercurial plan, or not treated at all, except by hygienic rules, they would have suffered less, and that the disease would have run a milder course than was the case under the treatment to which they were subjected. The conclusion, however, which the non-mercurialist would draw, viz: that mercury should not be given at all in such cases, does not necessarily follow, for I contend that the evident failure of mercury in these cases was due, not to the wrong remedy being employed, but to the right remedy being wrongly employed; and the proof of this is furnished by the subsequent course which each of these same cases ran, where mercury was properly employed.

In the first case, the papular eruption, which had continued, in spite of an active salivation, steadily declined and disappeared, under the inunction of fifteen grains of mercurial ointment daily, while the health remained perfect. In the second, an improvement such as caused the patient to say that "she never believed she would be so well," followed the use of the one-sixteenth of a grain of biniodide of mercury, with iodide of potassium, when five salivations and abundance of iodide of potassium alone had entirely failed to give relief.

In the third case, six weeks of the same treatment with mercurial fumigations to the ulcers, sent the patient out of hospital quite free from any symptoms; and in the fourth, in which serious head symptoms existed, similar treatment with counter-irritation succeeded, not only in restoring the patient, but, having been persevered in for three months, relieved her so much that she remains well after a year has elapsed, having previously been a constant sufferer, although more than once treated by mercury pushed to salivation. I do not claim for the mild or gradual method of mercurial treatment which I advocate, the power of eliminating the poison so completely from the system that no future symptoms will appear, for I have found that patients treated according to the plan I recommend, will frequently show slight symptoms for a year or more. What I do claim for the plan is, that if employed in the early stages of infection, it will remove the symptoms completely, while the patient's health will at the same time improve, and that it will, if pursued for a sufficient length of time, render the future symptoms much milder and of shorter duration than they would otherwise have been.

If the disease is allowed to run its own course, or even if the patient is treated with active mercurialization, the mild mercurial plan can not be so successfully employed subsequently, but still it remains the best treatment that can be adopted; it will still be able, in most cases, to restore the patient, for a time at least, to health, and to render the future recurrence of symptoms milder in their character. The methods which I have found the best in carrying out the mild mercurial treatment are, in the early stages, the daily inunction of from fifteen to thirty grains of mercurial ointment; and in the later stage, either the inunction of ten grains of the ointment, or the mixture of the biniodide of mercury and iodide of potassium, as employed in the cases I have related. With either I occasionally use fumigation, either general or local, according to the nature of the case.

In a certain class of cases, of which the following is an example, fumigation is of much service:

Case V.—Tertiary syphilis—Extensive ulcers of integument with sarcocele — Treatment by mercurial vapor bath.

W. C., forty years of age, a servant, was admitted into hospital on the 14th December, 1869. About nine years previously he had contracted a sore, which was followed by an eruption on his skin, since which he had been almost constantly suffering from some symptoms of syphilis. His general health was much deteriorated. The left arm from the elbow to the wrist was the seat of several jagged ulcers, oval in shape, about the size of a five-shilling piece each; their surfaces were covered with a fœtid, unheathy pus, their edges raised and livid. Over the skin upon other parts of the body were scattered the indelible cicatrices of ulcerated tubercles. The right testicle was swollen to about six times its natural size, being heavy, firm and painless; the left was atrophied. Pains along the long bones were felt at night. A few indurated glands were to be found in the groin and in the neck.

The treatment which in this case was successful in relieving the pains, healing the ulcers, and restoring the general health in five weeks, was the calomel bath every second day, assisted by eight-grain doses of iodide of potassium, in cinchona bark, three times a day. No impression was, however, made upon the sarcocele, which remained the same, when the patient left the hospital well in all other respects.

In concluding these remarks I would ask, how are the conflicting statements of those who advocate, and of those who denounce, the use of mercury in syphilis to be accounted for, unless we admit that this medicine may be either useful or injurious, according to the manner in which it is used? And again: Why has the external use of mercury been advocated by the most practical and able surgeons as the safest and surest method of treating syphilis, in preference to the easier and readier method of internal administration, unless that it was found by experience that the symptoms yielded more completely and satisfactorily, while the general health remained unaffected by the remedy when employed in this manner? The *gentle* and *gradual* action of mercury was thus gained, while its energetic and poisonous effects were avoided. —*Dublin Quart. Jour. Med. Sci.*

Art. II.—The Science and Learning of the Vatican. By C. F. Winslow.

Without introduction, we will open this analysis by first presenting the relation of the pope and priesthood to the anatomical and medical sciences, and show the degradation of these sciences by the secular government of the Church; and we will then examine the attitude of Rome toward other branches of learning, ascending successively into what are called the higher departments of physical culture, upon which the intellectual achievements of our age so truly depend for their success.

Affording, as the University of Rome does, the neatest, cleanest, and most commodious ampitheater for anatomical instruction which we have seen in Europe or America, the Faculty of this institution, nevertheless, permits no medical student to make dissections of the human body. In other words, there is no dissecting-room for the medical students of Rome. The deficient instruction received there is, we are informed, mostly, though not wholly, given from preparations and models. If subjects, or parts of subjects, are exposed for demonstration, students have no opportunity to familiarize themselves with the tissues and organs presented for a short time to their eyes. When we inquired of the Roman student who gave us this information, "Why they were not encouraged in studies of practical anatomy," the childlike and polite young gentleman replied, "I do not know. It is not permitted to us. I may be able to make dissections, perhaps, after I have taken my degree, and become a doctor."

When we inquire into the state of pathology and therapeutics—the scientific practice of medicine—the universal low repute of Italian and Roman physicians must answer for the debasing influence of priestcraft upon their education. As priests, deacons, and other officers of the Church, control everything in Rome, from the licensing of beggars and hack-drivers to the licensing of professors to teach, and physicians to publish their works, we must look to them, the sources of power and opportunity, for the results of ignorance, and the shortcomings of men, even in the most useful and important of the learned profession. Instead of encouraging medical science in its theoretical and practical aspects, and thereby raising up a class of scholars who might not only be useful to the Roman people, but also ornamental to the Vatican, they, with the pope at their head, personally and authoritatively assist to build up the grossest error, and overshadow sound learning with foul superstition. The facts which sustain this statement are patent and manifold all over the capital of Catholicism. Some may think the statement too strong and disagreeable; but let us see how truth will affect the judgment of those who have never looked into these matters.

On the Capitoline Hill, where formerly stood a temple of Jupiter, now stands the church of *Santa Maria di Aracœli;* and in one of the secluded chapels of this edifice, guarded day and night by Franciscan friars, is a sacred idol, called the *santissimo bambino*, or the most holy infant. It is a stout, plump doll, made of olivewood, gypsum, and paint, bedizened in silk and precious gems, and crowned with a magnificent cornet of gold and priceless stones. It is adored by monks and priests with amazing faith and reverence, as the personification of the Savior, when he was a babe in the manger of Bethlehem. This image is patronized by the Holy Father and the Romish hierarchy, far and near, in lieu of the graduates of their own universities and medical schools, and of their numerous licensed apothecaries, for the cure of diseases of all sorts, and even to promote fecundity where the mortal powers of the Roman nobility and others of the laity have been impotent. The fees to this little rosy-cheeked doll-doctor, for his professional visits and medical practice, affords sufficient income to support a large establishment of devout and jolly monks at Rome—some two hundred or more retired gentlemen, whose monastic habits, and general appearance and locomotions, remind one strongly of grizzly bears. This mute practitioner keeps a carriage, and is attended by friars and ecclesiastics in his daily and nocturnal visits; and his annual income is greater than that of any of the medical scholars whom his Holiness sends out from his scientific establishments, and for whose instruction he requires them to pay six hundred scudi, equal to six hundred and sixty dollars in American gold. This speaks eloquently for the Roman educational system, which the Holy Catholic Church, Roman and Apostolic, designs to introduce into the United States as a substitute for our present standards of instruction. As we have had several opportunities to view the grand ceremonials of the *Aracœli,* it has afforded us amusement, mingled, however, with disgust, to see bishops and cardinals, men subject at any moment to be made popes, and boldly asserting themselves to be the heads of Christianity and civilization, following this soiled doll in processions, bowing down to and worshiping it, flinging incense over it, and bringing it out upon the lofty terrace of the church, and elevating it before the assembled multitudes of Rome, that they may receive the benefit of its professional skill. Lest sensible Catholics, who may happen to peruse this article, may fancy that we write from prejudice or hearsay on some of these points, and may, therefore, be likely to disseminate error, we will mention, that on one occasion, when we accompanied friends to see this famous little doctor, he was absent on a visit to the sick. This led to a free conversation with the monks who have him in charge, and who hold him in great veneration on account of his miraculous skill in curing diseases. They kindly invited us to wait, saying with the gravest mien, that "he would not be absent, probably, more than half an hour, as he had only gone to Prince Torlonia's to visit one of his family who was sick." The Torlonias are among the most noted and opulent nobility of Rome; and we give the name in full, in order to show the extent of sacerdotal influence over the most respectable social circles of that city. We waited; and, during our stay, an obliging monk entertained us with the account of a curious episode in the history and exploits of this remarkable practitioner. On one occasion, several centuries ago, he was visiting a person afflicted with some chronic ailment, who stood in need of prolonged attendance. In order to secure this, another infant, dressed like the bambino, was fraudulently substituted for it, and returned instead of the real babe-in-the-manger. The devout friars who had charge of it perceived no difference, and suspected no deception; but, on the following night, the convent was filled with alarm and agitation, in consequence of a sudden and fearful ringing of all the bells, without any visible cause; and a terrible kicking was heard at the church door, when the whole community of monks rushed to see who was there, and what had happened in the outside world. Behold! there stood the real bambino, in a great rage, demanding admittance, and giving information of the infamous manner in which he had been treated; having been confined in bed with the invalid, while a sham doctor had been returned to take his place in the convent. He could not endure such treatment another minute; and escaping from the bed and house, had come all the way through the cold and muddy streets in the night, to notify his attendants of this abuse of their confidence, and personal outrage upon himself. We asked the good friar "if he thought this could be relied on as an authentic history of facts." He replied, with a slight shrug, "Certainly; for it was communicated to them as a correct tradition. For his part, he had no doubt of it, and every good Catholic believed it."

I listened to this and other equally interesting matter for a while; but, growing impatient at delay, was leaving, when I met a smiling friar bringing the doctor up the steps, with another friar following, who had accompanied him in the carriage during this professional call. I learned from these simple and pious men, that, when there is much sickness in Rome, the bambino is out on his medical rounds very often. I also learned from another reliable source, that on one occasion, several years since, the Princess Torlonia promised all her jewels to this little wooden baby, if he would assist her to bring a living infant into the world, as she had always before been unfortuuate in childbirth. The bambino secured to her this priceless happiness; and the little fellow became immensely rich. But the costly gems which he now wears, the monks informed me, were mostly contributed by other patients for other services. The capacity of this prodigy for curing fractures, broken heads, wounds of all sorts, besides common and contagious maladies, is very wonderful, as all will have abundant reason to judge who see the numerous offerings and delineations of successful cases suspended around his shrine and chapel.

A most costly apartment is now being especially prepared for this juvenile practitioner's residence. No regular practitioner in Rome—even the venerable and illustrious Toussig—is able from his earnings to build the equal of it.

Besides this bambino, there are other sacred images in other churches, visited by popes, cardinals, and priests, where persons afflicted with scrofula, headaches, and sore throats, may resort, in order to anoint themselves with oil that has been sacredly medicated, and which is presented to them in competition with the prescriptions of the regular graduates of the pope's medical school. We have seen the superstitious people of Rome come by scores and hundreds, and apply this remedy to their ailments.

It is useless, indeed it is wicked, for men as learned as the Jesuits pretend to be, to talk about the moral and physical influences of superstition upon the human constitution, and urge this argument as an apology for such fearful impositions upon any community, even upon one so debased as that of Rome. Did the spirit of science at all abound in the Church of Rome, its responsible chiefs would immediately eradicate, instead of perpetuate, these shams and outrages upon the medical profession—shams and outrages flung in the very teeth of the graduates of their own university, the money for whose education they themselves receive for the support of their own ecclesiastical dignities.

Now, when we come to chemistry and physics—sciences which in our days are opening to view the very fundamental secrets of nature, and the exact cultivation of which has really thrown more light on the ways in which God works than we have hitherto possessed; sciences which are sweeping the fanaticism and rubbish of past centuries from the paths of philosophy faster than investigations in other branches of learning seem to have done—where do we find the pope and his eight hundred most reverend and learned councillors at the Vatican?

Let facts answer.

A Roman journal sustained by pope, cardinals, council, and the whole Catholic world, under date of Dec. 24, 1869, publishes the following "miracle." This simple publication exposes their attitude in reference to physical and chemical discovery, their convictions of its practical importance, and their views of the value of positive knowledge to human society, and especially to the enlightenment of the Roman Catholic laity at large.

"The 'Divine Savior' publishes a letter which has been addressed to it from Concordia on the subject of a miracle which occurred in that place. Concordia possesses the bones of Donat, Secundianus, Romulus, who died during the reign of Diocletian. And here are the phenomena of which the letter speaks: Whenever the Church is afflicted or persecuted, these bones remain dry; but when, on the contrary, the Church is at peace and triumphant, the bones exude a transparent and thin water, like that which exuded on the centennial anniversary of St. Peter, the 12th of April of the present year, and on the 8th of December, the day of the opening of the Council. On this last occasion, the water ran in such abundance as to astonish and overwhelm with delight the multitude of priests and believers who rushed to enjoy the sight of this miracle."

This is a literal translation of an article published last Christmas for the perusal and edification of the Ecumenical Council and the instruction of Catholic Christendom. And it must be remembered, that every word published by the Roman press passes censorship and approval by the most learned priests.

Such, then, is the state of scientific knowledge and thought propagated by the authorities of the Vatican in this year of intellectual light, 1870. And we are compelled to infer, that such infamous fictions are not only tolerated, but also authorized, by the Jesuits, that astute and powerful order of propagandists, who, already controlling the pope and council, are insinuating their influence into modern society in every direction, and boldly declaring it to be their mission and aim to bring all political governments into submission to the Church of Rome.

On the 30th of April of the present year, happening to be in Naples, I went to see the awful miracle performed by bishops and priests of the liquefaction of the holy blood of St. Januarius. The thousands assembled within and without the cathedral could not be counted; and such a rabble I never saw elsewhere. That, on this occasion my curiosity was rewarded by the loss of a note-book from an inside breast-pocket may be an amusing circumstance to some; but the legerdemain by which the theft was effected can not be surprising to any one, when the religious teachers of a community are masters in deception, and public executors of the most bare-faced frauds which can be imposed on the credulity of the ignorant and devout. Such a multitudinous array of silver saints, and such a long procession of ecclesiastics sandwiched in between them, snuffing tobacco, laughing and chatting together, with their flattened palms folded on their breasts in sign of devotion, I never before witnessed, even in Rome. Popes, cardinals, archbishops, bishops, patriarchs, abbots, generals of all the orders of the Catholic Church, bow and pray at the shrine where these two small flat bottles of red material are guarded with especial sanctity. Thus they all, from highest to lowest, set an example of belief (which their manners falsify) in this monstrous fraud, and instruct their followers to accept for fact this chemical falsehood and unnatural object of devotion. This silly pretense, kept up from year to year with threadbare signs of decaying splendor, is another exhibition of the attitude of Rome toward positive truth, as displayed by experimental science, and taught in the schools of Protestant Europe and America.—*Old and New.*

ART. III.—ON WOUNDS OF THE HEART AND PERICARDIUM. Translated from a Review of George Fischer's Monograph, *Gaz. Hebdomadaire, Nov.* 20, 1868, by JOHN D. JACKSON, M. D., Danville, Ky.

It seems that Fischer is not the first who has engaged in the collection of statistics on the subject, but that Jamain collected and published, in 1857, most of the important cases known, and which amount to 121, and that Salle and Zanetti have likewise published memoirs. Zanetti in 1866, publishing 153 cases. The work of Fischer is a type of German scientific works, and contains within its 340 pages the history and an exhaustive analysis of 452 cases of wounds of the heart.

The history of wounds of the heart goes back to the time of Homer, and the combats of Idomeneus and Alkathous, of Patroclus and Sarpedon, with an account of the symptoms and gravity of the wounds. The first record of a case of a wound of the pericardium, dates from the time of Benivenis, (who died in 1503), and Cardenas, who, about 1501, chronicled an authentic case of cure following a wound of the pericardium, with loss of substance. Ambroise Paré first of all described a case of penetrating wound of the heart, with a microscopic examination.

Fabricius, of Hildamus, did not think wounds of the heart were necessarily mortal, and cited in support of his opinion a case in which a young man lived many months after a wound of the heart. Coming down from this epoch, at which it began no longer to be thought that such wounds must prove absolutely fatal from numerous records, from the most scrupulous observations, from experimental researches and rare observations upon animals, the interesting nature of the complete study of the subject is shown, and how precision in diagnosis is attained; a thing so generally difficult, but the importance of which is evident in both a prognostic and therapeutic point of view. While ancient experience left no hope, experiment and exact observation seem to encourage efforts to cure.

Wounds of the heart are relatively rare lesions, and are principally observed in the practice of civil surgery, suicides, duels or murders. They are rare on the field of battle; for instance, the sixth circular of the War Department shows that in the American war, of 87,822 wounded, among which are 7,062 gunshot wounds of the thorax, 4,759 wounds of the thoracic walls, and 2,303 penetrating wounds of the chest, there were only observed 4 cases of gunshot wounds of the heart. The 452 cases collected by Fischer, he divides into 401 cases of wounds of the heart, and 51 of wounds of the pericardium. These he subdivides according to the sect and order of frequency, into 123 wounds of the right ventricle, or 27.2 per 100; 101 wounds of the left ventricle, or 22.1 per 100; the pericardium alone has been found wounded 51 times; the right auricle in 28 cases; the two ventricles in 26 cases; the left ventricle in 13 cases, and the partition walls in 7 cases. The frequency of ventricular lesions (257) compared with those of the auricles, (31) will be observed. Furthermore, the relative proportion of wounds of the right and left sides of the heart, are different from what had been previously supposed, since we find 155 wounds of the right to 119 of the left side; the proportion between the two sides being 1.3 to 1, and not 2 to 1, as Jamain declared.

The division of wounds into penetrating and non-penetrating, shows that these last appertain especially to the ventricles and apex; in effect, for the right ventricle there were noted 9 from penetrating wounds to 107; and for the left there are exhibited 7 to 95, and for the apex 7 to 12. The auricles showed no non-penetrating wounds.

The author goes on to form comparative tables of the seat of wounds, the nature of the wound, whether due to a pointed instrument or fire-arm; to a contusion or rupture of the heart; all these etiological conditions being discussed with care. In the chapter devoted to the pathological anatomy of the subject, there are the most minute indications as to form, direction, the cauterization of the wounds, and a complete study of foreign bodies in the heart.

These tables indicate the connection between the lesions and the different points of the chest injured. The results are curious to study, for they show to a certain extent the most prominent points in the study of the reports of experiments in the amphitheater, and as is known to the present time, opinion has not been fixed on this subject. However, the results of observation seem to be in exact account with the divers reports of Luscha and exposed by the author in the beginning of his work.

The intercostal spaces most frequently injured in the order of their frequency on the left side, are the fifth, the fourth, the sixth, third and second spaces. On the right, first the fourth, then the third, fifth, second and seventh.

He then goes into minute details, telling of the connection between the penetration of certain points of the chest; injury to certain parts of the heart; for instance, if on the left side, an instrument penetrates between the second and third rib, generally the right ventricle, though sometimes the left, the partition wall and the pulmonary artery are wounded. Between the third and fourth rib the pulmonary artery can be wounded, or the right ventricle; but if the instrument deviates toward the rear, the left ventricle can be injured. The aorta is not exposed to injury except when the instrument deviates toward the right.

At a level with the fourth rib the ventricle has been wounded twice, the wound being at an equal distance from the nipple and the left sternum border. Between the fourth and fifth rib, double lesions are encountered, as between the third and fourth rib, it is oftener the right ventricle than the left, and the right auricle has been wounded with the aorta. On a level with the fifth rib and a finger's breadth and a half from the nipple, the wound strikes the left ventricle and the coronary artery. Etc.

He then lays aside the consideration of the symptoms and diagnosis, to speak at length of those cases in which the patients have survived. He presents here, not only a question of curiosity, simply, as it was for a long time considered, from the impression that wounds of the heart were invariably mortal; but we have facts often exhibiting themselves as dependent upon organic lesions.

Before this Jamain had marked out 121 cases, with 10 cures; Zanetti about 152 cases with 9 cures. Dr. Fischer, in a collection of 452 cases, records 72 cures, among which 36 have been established by autopsies, made a long time after the wound, and 36 are confirmed by the symptoms alone.

On separating the wounds of the heart, and the wounds of the pericardium, the following are the results: in 401 wounds of the heart there are found 50 cures, 17 of them being established by autopsy; in 51 wounds of the pericardium, 22 cures. On scrutinizing closely the doubtful cases, we have obtained finally the proportion of 10.7 cures to 100 cases of wounds of the heart, and 30 cures to the 100 cases of wounds of the pericardium.

Applying the percentage to those wounds, the seat and cure of which are establised anatomically, the following proportions are obtained: wounds of the apex 18 to 100; wounds of the septum 14 to 100; in these cases which are not penetrating, wounds of the right ventricle 9.7 to 100; of the two ventricles 7.6 to 100; of the left ventricle 5 to the 100.

On the other hand we have no wound of either auricle which has been cured. In one case, the coronary artery, examined 63 days after the reception of the wound, presented a cicatrix. If the nature of the wounds are viewed, it is seen that wounds by instruments of puncture enter 18 times to the 100 in the total of cures; wounds by fire-arms 8.4 per 100; wounds by cutting instruments 8 times to the 100. Recovery from rupture of the heart remains very doubtful, since there can be cited but a single case, that of Cavasse, or where there was found a cicatrix attributed to rupture of the heart.

A curious fact noted, is the presence of foreign bodies in the heart, demonstrating the fact that the opinions regarding the irritability of this organ have been exaggerated. Thus, in 12 cases of recovery, there were foreign bodies in the heart. In 8 cases of cure following punctures from needles, 6 times needles were found in the heart, and in one case, even a pin. In 7 wounds from fire-arms, in which the patients recovered, 4 times the ball remained in the heart; finally, a ball was gotten from the pericardium. It is unfortunate, that in the majority of cases, the description of the cicatrix does not permit a decision as to whether the wound has been penetrating. One may likewise comprehend how it is that we can not draw deductions of a very precise character regarding cases of cure, in which the symptoms alone have served in the diagnosis of a lesion or a cicatrization. Furthermore, it can be avowed that, in these cases counted as cures and verified by autopsy, the wound and its complications have often been themselves the cause, more or less directly, of the subsequent death; thus, our spontaneous ruptures, our aneurism, an endopericarditis ten years after the lesion, a perforation of the septum, nineteen years after the cure, and likewise an embolus, can be considered as tardy complications. But that which Dr. Fischer has made to stand out in bold relief after Jamain and Zanetti, is the possibility of cure. The prognosis will not be very greatly modified, every wound of the heart will none the less be considered as probably mortal; nevertheless we may learn to recognize the fact that, in some cases, we ought to retain some hope.

The reading of the work of Dr. Fischer shows that, in certain cases, the numbers speak for themselves, though one may reproach them for doing no more than confirm that which reason and a very limited experience had made very presumable. In uniting in his memoir a resumé of 452 cases collected by himself, the author now renders researches upon the subject of which he has treated very easy.

As pertinent to the subject we may here quote a case reported by Dr. Finnell, to the New York Pathological Society, at its meeting of December 9, 1865, and to be found in the "Medical Record" for January 1, 1869.

"Dr. Finnell wished to call the attention of the Society to a peculiar formation of stab wounds in the heart which he had noticed in a number of instances, and took occasion in that connection to refer to the case of Felix Larkin, presented at the previous meeting. The wound in that instance, as in others of a similar character, was more or less irregular in shape, and seemed to be formed of two distinct cuts that met each other at an acute angle. As there was only one external wound to correspond with one of the viscus, it was clear to him that the appearance of a double stab of the heart could only be explained in one of the two ways: either upon the supposition of the thrusting of the weapon at the time of the withdrawal, or by the contraction of the wall of the organ at the moment it was pierced. The latter was the most probable reason, and assuming it to be the true one, an important question in medical jurisprudence could be settled by it, namely, that the heart-wound was, if not the very first one inflicted, the one that caused death."—*Cincinnati Lancet and Observer.*

ART. IV.—QUACK CHEMISTS. By F. W. CLARK.

A few years ago, I read one of Miss Braddon's novels. It produced no very deep impression upon my mind, however; and to-day I can proudly boast that I have forgotten it, plot and all, with the exception of one incident, which I remember because of the scientific wrath it awakened in me. One of the characters in the story is found dead, with a half-emptied wine-glass by his side. Poison is suspected, and the contents of the glass are carried to a certain "distinguished chemist" for analysis; whereupon the aforesaid "distinguished chemist" reports the presence of a very deadly poison, made from the venom of the rattlesnake, which, though much used in India, is but little known to Europeans.

Now, in this statement there are three absurdities. First, the rattlesnake is not known in India; second, its venom is not a stomach poison; and third, such venom is not detectable by any analytical process. In fact, *pure* snake-venom might be carried to any living chemist with but little probability of his recognizing its poisonous character. Yet the chemist in the story is represented not only as having detected the poison after it had been mixed with wine, but also as having ascertained the species of snake yielding it.

I have selected this incident from a popular sensational novel as a fair illustration of the fantastic ideas held by people in general concerning the powers of chemical analysis—ideas which are held by many persons of high education, and which have rendered possible the most contemptible quackery in the science of chemistry. Miss Braddon can hardly be blamed for her mistake concerning analysis, when nearly all our apothecaries (miscalled chemists), and many of our physicians, would fall into the same error.

The truth is, that chemical analysis, in the present state of the science, is exceedingly limited in its application. Certain definite classes of substances can be detected, and their amounts determined under all circumstances; others can be recognized under favorable conditions; while a far larger number, though recognizable when pure, if mixed with other compounds are absolutely undiscoverable by any chemical means. To the latter class belongs a majority of the substances employed in the manufacture of ordinary empyric medicines; and yet there are many professed chemists, of high repute outside of their own profession, who pretend to analyze the nostrums offered for sale by quacks, and who do not hesitate to allow their certificates (always favorable) to be published.

I do not wish, by what I have just said, to throw discredit upon legitimate analytical methods. None but quacks dare claim superhuman powers in scientific attainments; and it is for the highest interests of all true students and observers to expose such intruders upon their domains. Hence it becomes necessary for me, in order to expose the false without creating distrust in the true, to give a brief outline of the principles of analysis.

The ordinary schemes or tables of reference used by analysts, include simply the various metals and their oxides, with a limited number of acids, comprising of course the various compounds formed by the union of these with one another. All the metals, with one or two very rare and practically insignificant exceptions, can be recognized without special difficulty in all cases. The acids, however, are more difficult, since, out of more than a thousand which are known, only about thirty are specially provided for. Some of these, even, can not be detected if occurring in complex mixtures, although the majority of common acids rarely baffle the chemist. But, besides these metals and acids, there are thousands of compounds known, for which no tests have been discovered. Each of these in the pure state may be recognized by its physical properties, or by ultimate analysis, which is the resolving of it into its component elements; but, if several such substances be mixed together, detection of any one is in the present state of chemistry an impossibility. And most of our remedial agents, especially those of organic origin, consist of just such substances, mixed in varying proportions in the most complex manner.

If you carry a fair sample of any commercial herb or drug to a competent, experienced druggist, in most cases he will be able to tell you what it is; but if you mix four or five such substances in powder, syrup, or tincture, identification becomes in most cases impossible. Ultimate analysis is useless, since all vegetable substances consist of the same elements combined in different proportions. Opium and thoroughwort, tobacco, coffee, and wormwood, all contain oxygen, hydrogen, nitrogen, and carbon.

To be sure, you may recognize morphine, quinine, strychnine, or any other of some twenty or thirty definite principles by certain specific tests; but these are exceptional cases. Some remedies, again, possess a strong characteristic taste or odor whereby they may be recognized; although a skillful quack will so mix his ingredients as to obscure or modify such taste or odor. A few drops of oil of cloves will overcome almost anything. But suppose you mingle five or six purely bitter remedies of similar odor, what could you learn of the mixture by tongue or nostril? No chemical means of distinguishing the various ingredients in such a mixture is known; and yet no quack chemist will for a moment hesitate to certify, that it is free from deleterious substances, or to recommend it as beneficial. For these swindlers not only do not hesitate at chemical falsehoods, but give medical advice also, if paid sufficiently, according to the wishes of their clients.

In many cases, these certificates are given without even an attempt at analysis having been made. For example, a friend of the writer was one day in the office of a noted quack chemist in one of the New England States, when a stranger entered with a new nostrum to be analyzed. The chemist, scarcely glancing at the substance, asked its proprietor what it contained, and received a list of ingredients in reply. Then, depending solely upon the word of the stranger (quacks are proverbially truthful), a *certificate of analysis* was made out, paid for, and the fellow went on his way rejoicing. The guilty chemist in this case has attained to some celebrity, and by the outer world is regarded as a high authority. This sort of thing happens every day; and many of the certificates printed upon the labels of proprietary medicines are of this character, and not worth the paper upon which they were first written.

These certificates, however, vary in form, the absolute lie being probably rare. A favorite style among those quack chemists who fondly imagine themselves possessed of consciences, runs somewhat as follows: This is to certify that I have *examined* Mr. Smith's, Brown's, Jones', or Robinson's (as the case may be) elixir, panacea, spirit, oil, or balm of a thousand humbugs (as the case may be), and find in it nothing of a deleterious character. The whole is wound up with a glowing panegyric (the degree of enthusiasm being measured by the amount of the fee received) upon the wonderful properties and virtues of the nostrum in question. Now, the analytical part of this is literally true in most cases. The substance is examined, the chemist looks at it, smells of it, and, if he is very courageous, tastes of it; and nothing injurious, in fact nothing whatever, is found. But the certificate is intended to convey the idea of analysis, and therefore is to all intents and purposes a lie. In fact, it is worse than a lie; for to the crime of deception is added the disgrace of cowardice and hypocrisy. The truth is used as a mask for the falsehood.

Many certificates, however, are given, which merely state that the nostrum examined is free from lead, mercury, silver, iron, or other metallic ingredients. These substances being easily detected, there is nothing necessarily false in such a certificate; and the value of the latter then depends wholly upon the character of the chemist giving it. It is to be hoped that they are usually true. But, notwithstanding these exceptional cases, the great majority of quacks' chemical certificates are absolutely worthless.

It is hard to overestimate the harm done by this scientific swindling. Many of the most widely advertised "remedies" are pernicious, not to say poisonous; and oftentimes serious illness, sometimes death, results from their use.

Undoubtedly the chemical certificates aid in the sale of these mixtures, or the manufacturers would not find it worth while to expend money on them. Hundreds of cautious, thinking people, who would otherwise hesitate before risking a trial of a quack medicine, are convinced by the chemist's signature of the harmlessness of a preparation, and are thereby induced to experiment (no other word is so appropriate) upon their real or fancied disorders. That much harm is thus done, there can be no doubt; but how much it is impossible to determine. When, however, we bear in mind that immense fortunes are accumulated by the makers of quack medicines, it becomes plain that the injury done must be often very great. The physician who is guilty of mal-practice in his profession harms a single patient, while the unscrupulous chemist, by each offense, may injure thousands. *It seems plain, therefore, that there should be some law upon our statute-books to punish quacks in chemistry, at least as severely as mal-practitioners in medicine.* That such a law would be difficult of enforcement, no one can deny; but it would at least have the good effect of making those who are now constant violators of professional honesty more cautious in their movements. It would be, perhaps, well to suppress by law, as far as possible, all quackery in medicine, upon the same grounds that we suppress other species of swindling. It matters not that a few nostrums may be in themselves harmless; they rarely do good, and many persons, by using them in case of sickness, are induced to dispense with proper medical treatment until it is too late, and death has become inevitable.

At present, thoroughly educated, reliable chemists are loath to undertake "job-work" of any kind, preferring rather to obtain permanent situations as professors, superintendents of chemical works, or managers of assay-offices. They dare not give false certificates, or such as would be available to the venders of patent medicines; nor will they even run the risk of being confounded professionally with their disreputable (half) brethren.

But it is not only in the analysis of unanalyzable nostrums that chemical quackery is evident; the same lack of conscience is manifest in other kinds of work. The mining company whose mines are deficient in metal wish a better certificate than truth will allow, and straightway the quack chemist finds for them as much of the precious material as they desire in their ores. The most worthless minerals are found to be rich in everything, and a hundred per cent. of gold from pure quartz is quoted on the prospectus of the mine. But here it must be borne in mind that the most honorable chemist, if slightly careless, is liable to be imposed upon by unscrupulous miners; the latter providing for analysis rich specimens from mines other than their own.

But, perhaps, the most glaring examples of scientific criminality may be found in the recommendation given by some chemists for dangerous and explosive naphthas and petroleums. Here is a case in point. A dealer carried a sample of a patent oil or burning-fluid to a well-known Massachusetts chemist, desiring a good recommendation, whereby he might secure better sales. The fluid was so inflammable that its vapor would ignite from a lamp placed ten feet from the bottle; and yet the chemist recommended it as an excellent article, much less explosive than other similar products which he had examined. Possibly, the latter part of the assertion may have been true; but the bare recommendation of so dangerous an article was criminal. *It would be, perhaps, well for each State to establish a laboratory under the charge of some thorough chemist, provide the latter with good assistants, and authorize him to exert a censorship over the importation, manufacture or sale of wines, liquors and kerosenes. If none of these articles were permitted to be sold except under such authority, quack chemists would be suppressed by lack of employment. Moreover, the fees for work done in such a State laboratory would more than pay the expenses of establishing and supporting it.*

But, though laws are good things to punish crimes, education is better to prevent them. So in chemistry more general education is needed. There is not a public school in Boston where chemistry forms part of the regular course of study, if we except the Girls' Normal School, in which a little superficial instruction in the science is given. In the English High School, it is included in the extra, optional, fourth year, but only to a very limited extent, and is rarely taken. Yet chemistry is certainly of equal importance with physics or astronomy; and, since it is involved in most arts and manufactures, would be of more value to people in general than physical geography, etc. To be sure, it is taught in many schools throughout the State, but almost invariably by incompetent teachers, from obsolete text-books, in a slip-shod "parrot" way, often without experiments. The science is being taught more and more in our colleges and universities, and is beginning to be recognized more fully in the various medical schools. With the greater spread of knowledge will come less abuse of ignorance.

In conclusion, now that I have shown some things that analysis can not do, it is due to my readers that I should say something of its real capabilities. In the first place, every compound or mixture is susceptible of ultimate analysis. That is, every substance can be resolved into its elements, these identified, and their amounts determined. But rational analysis, which recognizes the characters of definite compounds, is more important, and, as I have said, is limited. Now, by rational analysis, all bodies not of organic origin, such as minerals and ores, chemical preparations, etc., can be analyzed with almost unerring certainty. All ordinary poisons, such as arsenic, corrosive sublimate, strychnine, morphine or prussic acid, can be detected with so much certainty and perfection of method, that their use for criminal purposes is almost as dangerous to the poisoner as to his victim. Adulterations in wines, liquors, and articles of food, are usually discoverable without great difficulty, although in many cases it may not be possible to decide as to the exact nature of an impurity. Such an adulteration as that of sand in sugar, or starch in cream of tartar, however, may be detected by common sense, unaided by any knowledge of chemistry.

But the results obtained with that marvelous instrument, the spectroscope, add proof after proof to the adage, that "truth is stranger than fiction." Though common herbs may baffle the analyst, the latter can reach out to the stars, the comets, and the dimmest nebulæ, and wrench from them the secrets of their composition.

Three sciences here unite,—chemistry, physics, and astronomy; and already, in the very infancy of spectroscopic science, problems have been solved which a dozen years ago would have been declared insoluble. What have we not to hope from the spectroscope if its first few years have been so marvelously productive of great results? It has already opened vast fields of speculation, even hinting that our present elements may be compounds. It adds confirmation to the nebular hypothesis, giving vast clews to the history of the universe, and tells us how the early phases of our own solar system are being reproduced in far-off nebulæ. It proves that the most distant planets and fixed stars contain the same elements as our own earth; its facts in this respect trenching as closely upon absolute certainty as the human intellect will allow. Moreover, in ordinary analysis, the former labor of days is performed in a moment with the spectroscope; the only objection to the instrument being its marvelously excessive delicacy.—*Old and New.*

ART. V.—ON A PURELY MILK DIET IN THE TREATMENT OF DIABETES MELLITUS, BRIGHT'S DISEASE, DISEASE OF THE SUPRA-RENAL CAPSULES, FATTY DEGENERATION, ETC. By ARTHUR SCOTT DUNCAN, M. D.

The author continues a dissertation on this extensive subject through three numbers of the *Lancet,* in which he most strongly advocates the treatment of skim-milk exclusively, of these several troubles, and supports his position with records of cases showing the efficacy of this course.

The milk diet, in the first place, in diabetes, is not objected to by the patient, but is relished, especially at the outset of the treatment when the thirst is intense. In this it is signally unlike, and superior to the exclusively meat diet of Dr. Rollo. The milk diet is as far superior to the meat diet as this was to any other previously used. But it is necessary to be persevered in methodically and exclusively until convalescence is established. If this rule is not followed from the beginning, the result will not be successful.

The use of milk twenty-four hours will produce marked improvement; the quantity and density of the urine fall, thirst and voracious appetite disappear, the skin becomes moist and perspiration is re-established, the troublesome nervous symptoms are abated, and refreshing sleep succeeds to the previous sleepless, restless condition rendered intolerable by the incessant thirst. In the two cases recorded, this rapid improvement was noted. In another case, on the same treatment, at the end of three days and with no other remedy, the urine fell from 23 pints sp. gr. 1038, to 6 pints sp. gr. 1038. In other words, in three days there was a diminution of 17 pints of urine, and about 24 oz. of sugar. The other prominent symptoms of the disease underwent a like rapid change for the better. The fact that milk exercises a greater influence over diabetes than a purely animal diet, may be explained by the fact that casein, being a primitive albumen, is infinitely superior, as an agent of nutrition, to the albumen of muscle which has been highly organized for an important vital function. Beside the sugar of milk is altogether innocuous in this disease, as has been shown by experiments. It supplies the system with a saccharine, proximate, alimentary principle, equivalent to such as vegetable food affords. The sugar of milk is destined to supply for the nutrition of the young, an equivalent for the amylaceous and saccharine principles of the food of adults. Sugar in moderate quantities is not injurious in diabetes; it can not be again converted into sugar by any morbid process in the liver or elsewhere, and hence can not furnish a pabulum for the elaboration of diabetic sugar.

Starch seems to be fuel for the keeping up of morbid action in all save advanced cases, hence its use in any shape should be wholly interdicted, even after recovery and sugar has for a long time been absent from the urine. The necessity of this precaution was shown by the case of one of the patients treated, who before leaving the infirmary, clandestinely partook of large quantities of bread, with the effect of causing the prompt reappearance of sugar in the urine; this, however, subsided in a few days on strictly prohibiting starchy foods.

The success of the milk treatment shows that in this disease it is not necessary to restrict the amount of fluid taken by the patient; the thirst bears a definite relation to the quantity of sugar voided, and subsides as the latter is reduced. All the patients Dr. D. has treated, were kept wholly on the use of skim-milk, until convalescence had been for sometime established, when lean meat and green vegetables were added for dinner.

Two cases are recorded of Bright's disease in which the milk diet was resorted to. In one, the patient had become enormously œdematous and ascitic; the urine was scanty, highly albuminous, and had a specific gravity of 1010. There were found abundant fatty and hyaline tube-casts. The patient was suffering from cephalagia, nausea, and his countenance was pale, pasty, and puffy.

Five pints of carefully skimmed milk was ordered to be taken in divided doses each day; all other articles of diet were prohibited. A diuretic was likewise ordered, composed of twenty grains acetate of potash and twenty minims tincture of digitalis, to be taken three times a day. This course was pursued for a fortnight, when all traces of albumen in the urine had disappeared, and there was not a trace of dropsy left, neither did any again return; the daily quantity of urine which had been, before commencing the treatment, five pints, was now reduced to three pints, but its density had increased to 1015.

At this period the diuretic was left off, the milk continued, and a moderate quantity of brown bread allowed at each meal. A tonic of sulphate of quinine and sulphate of iron was ordered. In a month he was dismissed cured. In six months there had been no reappearance of the disease.

In the other case, the patient's condition was very much like the first, only perhaps worse. Exactly the same treatment was prescribed as with the former patient. The improvement was as prompt and positive. But on eating clandestinely starchy foods far beyond the amount allowed, he had a relapse, which brought back his disease with increased severity. His life was almost despaired of; coma began to appear, and death seemed imminent. By the continued use, however, of drastic purgatives, his condition was improved, when the exclusive milk diet was again resorted to, and the patient went on to complete recovery, to all appearance.

In about nine months, under bad hygiene at his own home, the disease was gradually reappearing.

A case is recorded of lead-poisoning and Bright's disease, with anasarca and epileptic coma, which had been in progress, from, at the beginning, slight pains in the head and legs, for six years. The patient had all the symptoms of severe lead-poisoning, with albuminous urine. Under an ordinary treatment for the lead-poisoning, the case improved in all its nervous manifestations, but the œdema constantly increased, and the deposit from the urine became more abundant. Epileptiform seizures were very frequent and severe. The patient was now placed on an exclusive skim-milk diet, and had twenty grains of acetate of potash three times a day as the only medicine. The case went on to a rapid and complete recovery.

These cases were undoubtedly what Virchow calls *parenchymatous nephritis*—the disease being seated chiefly in the glandular epithelium of the uriniferous tubes. The *modus operandi* of the disease seems to be this: The convoluted cortical uriniferous tubules become swollen and distended by their morbid epithelial contents—glued together into solid casts by a fibrinous effusion. The fibrinous capsule of the kidney yielding but slightly to the pressure from within, the secondary capillaries—the efferent vessels of the Malpighian tufts, just external to them, become compressed, and the circulation through them more or less impeded. The blood is consequently dammed up in the primary vessels of the tuft, which are really within the tube and subject to no compression, and there results a constant escape of a large amount of albumen through their walls from the blood. The effect of the drain of albumen from the kidneys, is to impoverish the blood in this direction so much, that from the proportional excess of watery elements the red corpuscles are destroyed, and general dropsy occurs.

Now, the first effect of skim-milk, taken to the extent of five or seven pints daily, is to cause a powerful diuretic effect; the effect of the profusion of water is to *flush* the uriniferous tubules, and wash out the material that blocks them up. This relieves the pressure on the secondary capillaries, more and more blood flows through them, and the congestion of the capillaries within the Malpighian tufts is removed, and less and less albumen transudes through their walls. While this beneficial change is going on, healthy epithelium is developed in the tubules which secrete the urinary excrement from the blood.

Milk is superior to other diuretics, because while it removes a large amount of water from the blood, it renews the supply of albumen in this fluid by the amount of this element which is contained in its substance, restoring a healthy condition of the blood, and preventing a *return* of the dropsy.

ART. VI.—INFLUENCE OF MUSCULAR EXERCISE ON THE URINE.

Dr. Austin Flint, Jr., read a paper entitled, "The Influence of Excessive and Prolonged Muscular Exercise upon the Elimination of Effete Matters by the Kidneys; based on an Analysis of the Urine passed by Mr. Weston while walking One Hundred Miles in Twenty-one Hours and Thirty-nine Minutes."

When Mr. Edward P. Weston was performing his great pedestrian feat, at the Skating Rink in this city, last May, Dr. Flint visited the rink near the close of the hundred-mile walk. He learned that, by chance, all the urine passed during the walk had been collected in a single vessel. This was placed at his disposal and subjected to a careful quantitative analysis. The observation being entirely unpremeditated, certain elements of scientific completeness were lacking, such as the exact amount of food and drink consumed, etc.; and the specimen of normal urine for comparison was necessarily obtained, not before the walk, but some three months later, when the conditions seemed perfectly satisfactory.

It was evident that an accurate comparison of the urine passed during such an enormous strain upon the muscular and nervous systems, under known conditions of diet, etc., with the normal urine under known conditions, would be of great importance to science; especially since the observations of Fick and Wislicenus, Haughton, and others, had tended to throw doubt upon the commonly received view that exercise increases the elimination of urea.

Mr. Weston is 31 years old; of medium hight, rather slight; ordinary weight, without clothing, 122 pounds. From his professional occupation, his hours of sleep and eating are quite regular. He has never taken a course of "training," preparatory to his feats of endurance. His general health is perfect. At the time of the walk he was in "fine" condition, and his weight was five pounds less than ordinary.

The conditions during the walk were, as nearly as could be ascertained, the following:

Weight of body, without clothing, 117 pounds.

Food and drink taken: Beef essence, between one and two bottles; oatmeal gruel, two bottles; sixteen to eighteen eggs, raw, in water; lemonade, half a pint; champagne, about three fluidounces; water to rinse the mouth every few minutes, but little swallowed.

No sleep; no alvine evacuation; perspiration slight.

The urine passed during this time (counted as twenty-two hours) measured 73½ fluidounces (estimated for twenty-four hours at 80 fluidounces); acidity normal; color light canary; odor strongly urinous, but normal; specific gravity, 1011.55; no abnormal matters; microscopical examination negative. Analyzed by the methods detailed in the speaker's manual of the "Chemical Examination of the Urine," its composition per fluidounce was found to be:

Urine of Exercise per Fluidounce.

Urea	5.779 grs.
Chlorine	1.120 "
Sulphuric acid	0.920 "
Phosphoric acid (total)	1.504 "
Phosphoric acid (with alkalies)	1.280 "
Phosphoric acid (with earth)	0.224 "
Uric acid	0.500 "

The conditions during the twenty-four hours, 6 P. M. to 6 P. M., selected for collecting the standard specimen of urine for comparison, were as follows:

Weight, naked, 122 pounds.

Food and drink: Supper—Pickled lamb's tongues, warm light biscuit, one cup tea. Dinner—cold corned-beef, hot bread-cakes, one slice bread, one cup coffee. One glass of effervescing root beer, and two cigars during day. Had eaten salt ham three hours before the beginning of the selected twenty-four hours.

Sleep between eleven and twelve hours; one alvine discharge (no urine lost).

The urine passed in the twenty-four hours measured 33 fluidounces; acidity rather faint; color light canary, slightly turbid; odor strongly urinous, but normal; specific gravity 1024.43; no abnormal matters; decomposition rather rapid; microscopical examination showed slight excess of mucus, otherwise negative. Analyzed by methods identified with the last, the composition per fluidounce was found to be:

Urine of Rest per Fluidounce.

Urea	5.800 grs.
Chlorine	3.360 "
Sulphuric acid	1.440 "
Phosphoric acid (total)	0.960 "
Phosphoric acid (with alkalies)	0.640 "
Phosphoric acid (with earth)	0.320 "
Uric acid	0.680 "

The urine of exercise, calculated for twenty-four hours, is compared with the urine of rest for twenty-four hours in the following table:

Urine of Rest and of Exercise for Twenty-four Hours.

	Rest.	Exercise.
Total quantity	33.000 fl. oz.	80.000 fl. oz.
Urea	191.400 grs.	463.368 grs.
Chlorine	110.880 "	89.808 "
Sulphuric acid	47.520 "	73.776 "
Phosphoric acid (total)	31.680 "	120.600 "
Phosphoric acid (with alkalies)	21.120 "	102.600 "
Phosphoric acid (with earth)	10.560 "	18.000 "
Uric acid	22.440 "	40.080 "

After making all allowances for differences of diet and other conditions, the speaker concluded that the severe and prolonged muscular exertion must be credited with producing a decided increase in the amount of water eliminated by the kidneys; an increase from seventy-five to one hundred per cent. in the amount of urea eliminated; a considerable part of the increase in the sulphates and phosphates;

and an increase of about seventy-eight per cent. in the uric acid. The dimunition of the chlorines seemed pretty well accounted for by the diet.

For further calculations from the above data, and a more detailed statement of the points involved, we refer the reader to Dr. Flint's paper, which is to be published.*

The Society then adjourned.—*N. Y. Medical Record.*

ANALYTICAL DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."—PLAUTUS.

Art. I.—Sciatica.—In a recent number of the *Medical Press and Circular*, there is an excellent suggestion in regard to the treatment of intractable trouble—Sciatica. Mr. J. Waring Curran thus describes his simple and successful method of treatment:

In my student-days the over-estimated iron of Sir Dominic Corrigan was in constant requisition by the Dublin Hospital surgeons. In practice, I have obtained nothing but vexatious disappointment in its use, as a counter-irritant in the treatment of sciatica. The numerous cases recorded by the Dublin men, wherein Corrigan's iron was employed with so much benefit, were cases wherein change of diet, rest, and warmth, and a suitable internal treatment, contributed as much to benefit the patient as the counter-irritants. Blistering along the course of the nerve is very uncertain. The hypodermic injection of morphine lulls the pain for a time, which only begins with unusual severity, and the strong liniments of aconite and belladonna, when applied to the surface, I have ever found inert. Accordingly, I have adopted the following treatment: I have employed it now for some years, and can confidently recommend it as being safer, surer, and more satisfactory, than any treatment, or method of treatment, I have anywhere observed, or that I have myself ever employed.

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*It appears in the *New York Medical Journal* for October.—Ed.

In a small porcelain vessel I mix one grain of morphine and three grains of extract of belladonna with six drops of creosote. I get my patient out of bed, standing as erect as the nature of his disease will permit him, and began making small incisions, half an inch long, with an intervening space of three inches between each incision, cutting only through the skin and subcutaneous cellular tissues. I make the incisions alternate on each side of the nerve, beginning underneath the fold of the *gluteus maximus.* Having wiped off the effused blood, I quickly rub in the composition. The morphine and belladonna allay the pain, and the creosote sets up, if properly applied, a certain amount of local irritation, which is very desirable. M. du Chaillu, in his exhaustive and popular work on the gorilla, records a somewhat similar procedure existing among the Celond races. If my memory serves me, caustic lime is the agent he records as being employed.

To every patient suffering from sciatica I exhibit iodide of ammonium, and I have remarked, as I hope soon to show, that its therapeutic power is superior to the iodide of potassium, but in no complaint will this be appreciated more than in the *eruption* stages of syphilis and in diseases of the glandular system. The patient, bent double with acute pain, will be found, after the incisions are made and the morphine composition rubbed in, able to move his leg freely in any direction. There is, of course, a numb feeling experienced, but the liberation from acute suffering provokes an expression of gratitude, which is conclusive evidence of the value of the plan of treatment advocated.

Art. II.—Mortality of New-born Children.—The commission of the French Academy of Medicine has presented a most excellent report in regard to mortality of new-born children. The following summary furnishes, in brief, the aggregate result of their investigations, the causes of the mortality mentioned being classified as follows:

1. Want, with its train of evils, debility, etc.
2. Neglect of proper and regular milk supply.
3. Ignorance, in regard to alimentation, hygiene, etc.
4. The abuse of artificial milk supply (always inferior to the maternal milk supply), and the difficulties in the appli-

cation of which nearly always render it a dangerous method of alimentation.

5. Premature alimentation, which ought not to be confounded with an artificial milk supply, although these are always associated together.

6. The absence of necessary hygienic precautions, and especially the chilling to which new-born children are so frequently exposed during transport.

7. The neglect of medical precautions at the comencement of disturbances of health.

8. The want of regular supervision and medical inspection, as much in the matter of the recruiting of nurses as in that of the attention to be paid to the infants.

9. The objection, still too general, of carrying the children to the mayor for the declaration of the birth.

10. The culpable carelessness and indifference of parents with regard to putting out children to nurse.

11. The frequent postponement of vaccination.

12. The localization of the nursing industries into too small a number of departments, whence the poorness of the blood of the women in these same departments.

13. The great number of illegitimate births.

14. Finally, the more or less criminal acts which constitute all the marked varieties of infanticide.

Art. III.—Post-Partum Hæmorrhage.—A recent number of the *New York Medical Journal*, contains so excellent an abstract of an interesting and instructive debate on this important subject that no analysis that may be attempted can fail to do injustice to all concerned—this abstract is, therefore, given entire:

Dr. Robert Barnes, at a recent meeting of the London Obstetrical Society, read a paper on Uterine Hæmorrhage after Labor. The following abstract of the paper, and the discussion thereon—although it contains nothing novel—will, from the peculiarly practical nature of the procedure, and the authority of the eminent men taking part in the discussion, prove both interesting and serviceable to our readers:

The author endeavored to define the conditions upon which arrest of hæmorrhage after labor depended, the action of the remedies in common use, and the indications for resort to particular remedies. The remedies almost exclusively used depended for their efficacy upon their power of exciting contraction of the uterus. This presupposed nerve-force enough to respond to excitation; but, when this was exhausted, remedies failed. It became then necessary to seek a new power that would act under the condition of exhausted contractility. This was found in styptics like perchloride of iron, which acted by coagulating the blood in the mouths of the open vessels, and corrugating the inner surface of the uterus. Acting exactly where ordinary means failed, it was a new power to save women from dying of hæmorrhage. Examining the action of ergot, compression of the uterus, and cold, he urged that these should not be trusted if they failed to act quickly; for, if they so failed, it was probably because contractility was gone. If persevered in beyond this point, they did harm. Ergot and cold added to the depression; kneading might bruise the uterus; all were apt to occasion some form of puerperal fever. The perchloride had in several cases been followed by death when used for injecting nævi; but this case was essentially different from that of injecting the uterus. In his own practice he had observed three orders of cases. In the first all recovered well, the hæmorrhage being immediately stopped; in some of these death would almost certainly have ensued but for the remedy. In the second series recovery occurred, phlegmasia dolens supervening; but phlegmasia dolens was not unusual after severe hæmorrhage, and some of these cases would have died but for the remedy. In the third class death followed, but the patients were moribund when the remedy was applied—it came too late. Here the remedy was transfusion. The practical lesson resulting from a review of these cases was, to observe the rule he had laid down—not to persist too long in the use of cold, kneading, and other remedies, but to resort to the perchloride before collapse had set in. Dr. Barnes showed a convenient case, constructed by Krohne & Sesemann, containing a set of his dilators, a Higginson's syringe with uterine tube, and a bottle for perchloride of iron.

Dr. Rogers could most cordially agree with every word of Dr. Barnes' admirable paper. He (Dr. Rogers) had first used the perchloride some fifteen years ago in post-partum hæmorrhage, having failed with a strong solution of alum. He had since then employed it five or six times, and, in every case, successfully. He thought Dr. Barnes had omitted the mention of galvanism, on which he placed some reliance, and which had been advocated by his late friend, Dr. Mackenzie.

Dr. Cleveland thought one of the difficulties in the treatment of post-partum hæmorrhage consisted in determining when the means in general use should give way to the remedy recommended by the author. It was difficult, too, when single-handed, to leave the patient, for ever so short a time, to prepare an injection. He had himself used an eight-ounce india rubber bottle, to which was easily attached a flexible male catheter. This could be used more readily than Higginson's syringe, and with less risk of injecting air. He would inquire if the author had used emetics, as he had himself witnessed the good effect of vomiting on more than one occasion. He would also ask if the free use of stimulants, especially at the commencement of flooding, was not open to objection.

Dr. Wynn Williams was hardly prepared to hear that the knowledge of perchloride of iron as a styptic in these cases was as limited as the author supposed. He himself had used it for a long time, although not exactly in the same manner as the author of the paper, but in a way which he might call the ready method. This consisted in taking a sponge, on which some of the tincture of the perchloride had been poured, and passing it into the uterus through the hollow of the hand already introduced, after, of course, previously emptying the uterus of clots, and then sponging the interior of the uterus with it, leaving it in the uterus, if seen fit, with a string attached. He thought this plan less objectionable than injecting a considerable quantity of fluid. The stains on the hands of the operator were readily removed by a solution of oxalic acid or salts of lemon.

Dr. Braxton Hicks most cordially agreed with the whole paper. He wished to add, however, a few remarks. In the first place he thought there was a considerable difference in different cases as to the condition of the internal surface of the uterus after expulsion of the placenta. In some uteri examined after death, the large apertures of the sinuses described by many authors were absent. There were of course the arterial openings and those of their return veins—of considerable size certainly, but not very large. In others it would be found that the sinuses, in their oblique passage through the uterine walls, occasionally abutted on the line of separation of the placental decidua. When the placenta was removed, then the feeble wall gave way, and severe loss would result, unless the uterus contracted quite firmly. In the former case it did not require that severe uterine contraction, and the perchloride would readily act; in the latter it would probably be found that even the perchloride would fail to arrest this great stream. Enormous gushes he believed to be the result of a pre-accumulation which had been going on unobserved. To one class of cases Dr. Barnes had not alluded, viz: placenta prævia, where the cervical zone was relaxed after delivery. In these the perchloride applied to this surface was of much value. In severe cases also of abortion, when the uterus had been emptied, he had used it frequently with complete success, and without any untoward result. He used a somewhat weaker solution than Dr. Barnes.

Dr. Hall Davis could add his testimony to the value of the iron solutions. He had used them for several years among his hospital patients; scarcely a week passed without his resorting to them. He had used the pernitrate, the persulphate, and the perchloride, and had found them about equally efficacious. It was of the utmost importance before using them to empty the uterus of any contained clots, that the styptic might fairly come into contact with its internal surface.

Dr. Playfair referred to the importance of aiming at the prevention of post-partum hæmorrhage, and urged the careful following down of the contracting uterus with the hand. On the subject of the value of the perchloride, he could but add his testimony to that of the previous speakers.

Dr. Tyler Smith, after eulogizing the paper of Dr. Barnes, said that he believed but few cases of dangerous flooding would occur, if in all cases a full dose of ergot were given immediately after the birth of the child. It would, in his opinion, be a vast improvement in obstetrics if the forceps could be substituted for ergot as now often given during labor, and if the ergot were administered habitually at the moment of birth, or while the head was passing the vulva. Besides the prevention of hæmorrhage, sub-involution of the uterus would become less frequent. This rule of giving ergot had been extensively followed by his advice, and with the best results, in India, where flooding was still more common than in this country.

Dr. Aveling feared that the styptic fluid might enter the circulation and produce thrombosis. He thought the principle good, but that the sponge plan of Dr. Williams might be safer than Dr. Barnes'. He would have liked to have heard some reference to transfusion.

The president (Dr. Graily Hewitt) thought the profession would be gratified in hearing, through the medium of this Society, the opinion of so many distinguished men on this important subject. After the decided opinions expressed in favor of the perchloride of iron, its use, so ably advocated by Dr. Barnes, would probably become more extended. As preventive of hæmorrhage he had great belief in pressure, and in fact the only cases in which he had seen hæmorrhage fatal under his own care were cases in which, unusual attention to the child being required, the uterus had not been uninterruptedly watched over. Transfusion, to which Dr. Aveling had alluded, was adapted for cases of a somewhat different nature, where the hæmorrhage had ceased.

Dr. Barnes, in reply, said he had not forgotten either the subject of transfusion or prevention, but the problem set in this paper was how to deal with hæmorrhage when present. With regard to electricity, he had preceded his friend, the late Dr. Mackenzie, in proving the power of faradization in causing uterine contraction, but he had abandoned it because it was inconvenient, often intensely distressing to the patient, and inferior to other means. As to Dr. Hicks' remarks upon the frequent absence of large openings of sinuses on the inner surface of the uterus, he reminded the Society that the obliquity of the openings rendered it very difficult to find them; and that Dr. Chowne and others, by injecting the vena cava backward, showed that water would escape in torrents on the uterine surface. With reference to priority, he must say that he was surprised to hear such very general expressions of approval of the treatment; but that it was not yet a recognized plan was proved by the absence of mention of it in our text-books. It appeared to have been first used by D'Outrepont; it was pointedly recommended by Kiwisch in 1840; his own first published recommendation of it was in his Lettsomian Lectures on Placenta Prævia in 1857, and of course he had used it before that date. In conclusion, he expressed his belief that the perchloride of iron would come into general use as a recognized plan of treating uterine hæmorrhage.

Art. IV.—Sex of the Fœtus in Uteri determined by the Number of Cardiac Pulsations.—The *Edinburgh Medical Journal* contains the following instructive and suggestive tables.

The first case was one of twins, the heart of the one fœtus was heard in the right groin, beating 110 in the minute, and on delivery it proved to be a male; the second heart was heard in the left hypochondrium, beating 154, and on delivery it was found to be a female.

TABLE I.—MALES.

2.	Fœtal	pulsation,	138	per minute.
3.	"	"	138	"
4.	"	"	135	"
5.	"	"	130	"
6.	"	"	130	"
7.	"	"	132	"
8.	"	"	132	"
9.	"	"	140	"
10.	"	"	132	"
11.	"	"	140	"
12.	"	"	136	"
13.	"	"	133	"
14.	"	"	134	"
15.	Fœtal	pulsation,	116	per minute.
16.	"	"	120	"
17.	"	"	120	"
18.	"	"	138	"
19.	"	"	125	"
20.	"	"	140	"
21.	"	"	140	"
22.	"	"	137	"
23.	"	"	140	"
24.	"	"	141	"
25.	"	"	122	"
26.	"	"	120	"

TABLE II.—FEMALES.

1.	Fœtal	pulsation,	150	per minute.
2.	"	"	142	"
3.	"	"	140	"
4.	"	"	150	"
5.	"	"	144	"
6.	"	"	140	"
7.	"	"	140	"
8.	"	"	144	"
9.	Fœtal	pulsation,	140	per minute.
10.	"	"	152	"
11.	"	"	140	"
12.	"	"	143	"
13.	"	"	144	"
14.	"	"	141	"
15.	"	"	160	"

From these two tables it seems that when the pulsation varies from 120 to 140, the probability is that the fœtus will be a male, and when the pulsation varies from 140 to 160, the fœtus will likely be found to be a female. But there are some exceptions to these facts. In three cases in which the pulsation was from 150 to 160, the fœtus proved to be a male; and in fifteen cases in which the pulsation varied from 116 to 138, the fœtuses were found to be females. It therefore appears that there is less frequent variation in the pulsation in the male fœtus than in the female; or rather that there are fewer cases in which the heart's action exceeds 140 in the male, than that it falls below their number in the female.

These tables are exceedingly interesting, however, *so far as they go;* and the subject is well worthy further attention.

Art. V.—Normal Position of the Uterus.—The *Boston Medical and Surgical Journal*, June 2, 1870, contains the following remarks as the conclusion of an elaborate article in the last number of *Archiv fur Gynækologie* of Berlin on the normal position of the uterus, by Carl Crede, of Leipsic:

1. Anteflexion in a varying degree is the physiological condition of the uterus in nearly half of all women.

2. The uterus has its correct physiological position, which is exactly perpendicular to the floor of the pelvis, only in a third of women.

3. Retro-displacements of the uterus, as retroflexion and retroversion, are the rarest forms of displacements, and therefore of the most pathological importance.

4. Versions and flexions of the uterus, which can be called physiological in half the cases, are very slight.

It is to be strongly hoped that more numerous and more exact observations will confirm these results of our own researches.

The modern mechanical treatment of versions and flexions of the uterus has far outstripped anatomical and physiological observations, and has, according to our deliberate and unprejudiced decision, indecently overstepped its proper limits.

As we are convinced that anteversions and flexions are normal positions of the uterus, that the pathological conditions accompanying these are essential, and that these displacements are of no importance, we hope that the at least superfluous and in many cases dangerous mechanical intra-uterine treatment with probes and pessaries will be in great part abandoned, and such a course will certainly benefit the women.

Only where the anteflexion is extreme, so that the escape of fluids from the uterus is prevented, and we have symptoms (often due also to narrowing of the cervical canal) of menstrual colic, retention of mucus and blood, sterility, etc., is there any indication for the repeated reposition of the uterus, or an operation for enlarging the narrowed cervix, measures sometimes of the greatest benefit. But, for ante-displacements, vaginal and intra-uterine pessaries are mostly quite superfluous.

On the contrary, in cases of retroversion, and especially retroflexion, there is full justification for mechanical treatment.

Here, however, first remove all attendant complications, for in many cases after the cure of all such complications, in spite of retro-displacement persisting in a greater or less degree, the former bad symptoms of any importance disappear.

In such cases all preliminary mechanical treatment can at least be dispensed with.—*N. Y. Med. Journal*, for Sept.

ART. VI.—*Anointing in Infantile Disorders.* H. G. KNAGGS, M. D. [*Lancet*] states that during the past eleven months, he has been testing, with uniformly successful results, the value of a very simple method of treating such infantile complaints as atrophy, bronchitis, convulsions, diarrhœa, febrile disturbances generally, and indeed all disorders of childhood which are accompanied by an unnatural state of the skin.

The treatment simply consists in smearing with salad-oil the whole surface of the body, from the crown of the head to the tips of the fingers and toes, the process being repeated every twelve, six, or even four hours, according to the urgency of the case. Of course, the use of a long flannel gown or small blanket is obvious, and the fluid should be slightly warmed.

The application of oil, the author writes, possesses the following immense advantages over the ordinary warm bath:

1. Skin-action is more completely and permanently restored.
2. The danger of reaction is avoided, for there is no sudden change of temperature; and moreover the sheet of oil protects the surface from atmospheric influences.
3. It acts as a fuel-food, not only preventing waste of tissue, but actually increasing the bulk of the little patient.
4. It does not depress, but, on the contrary, appears to exhilarate.

It will scarcely be credited by many that the formidable affections above mentioned will frequently yield to this treatment, or at any rate show signs of abatement in from twenty minutes to four-and-twenty hours, but such is the case, though sometimes forty-eight or even seventy-two hours will elapse before any decided signs of improvement occur.

CLINICAL RECORDS.

"Ex principiis nascitur probabilitas: ex factis, vero veritas."

LESSONS FROM THE MEDICAL CLINIC AT THE "HOSPITAL DE LA CHARITE," given by S. JACCOUD, Assistant Professor to the Faculty of Medicine at Paris; Physician to the Hospital St. Louis; Chevalier of the Legion of Honor; Corresponding Member of the Royal Academy of Science of Lisbon, and of the Medical Societies of Berlin, Vienna, Wurzburg, etc. Containing 29 Wood-cuts and 11 Chromo-lithographs.

[Translated by Dr. J. D. JACKSON, of Danville, Ky.]

A Case of Febrile Icterus—Symptomatic Diagnosis—Pathogenetic Conditions—Cause.
Hepatic Congestion, and its Forms—Diagnosis of Active Congestion, and Acute Catarrh of the Biliary Passages—Distinct Realizations of the latter—Cholecystitis—Catarrhal Angiocholitis—Differential Diagnosis.
Anatomical and Etiological forms of Angiocholitis—Prognosis—Treatment.

Gentlemen: The young man, aged twenty-one, who is in No. 1, St. Charles Ward, has been in our service for some days. When we observed him, on the day following his entrance, we were struck with the unnatural tint of his skin. This discoloration, which even to-day persists, though perceptibly fainter, was of a lively yellow; spread over the whole cutaneous surface, it presented a particular intensity in the conjunctional *culs-de-sac* at the palatine arch and inferior surface of the tongue, and in the track of the ranine veins. The urine was highly colored, of a brownish tint, approaching mahogany. There was already a strong presumption in favor of the presence of the coloring matter of the bile, and the addition of some drops of nitric acid transformed this probability into a certainty, in communicating to the liquid a characteristic deep green color. This revelation left no doubt about the production of the yellow discoloration of the integuments; this tint was due to an impregnation of the tissues by the biliary pigment. It was, then, an icterus.

In all cases of this kind it is thus that you ought to proceed; it is the origin of the abnormal color that you ought to determine at the start. This first research presents no difficulty; generally it is sufficient to cast a glance at the patient to recognize the yellowness; and if, because of the faintness of the tint, or from any other circumstance, you have any hesitation, the methodical examination of the urine will soon cause it to disappear. Only be aware of the fact that the characteristic reaction of this liquid does not always appear at first; in certain rare cases it does not show itself until the end of some hours. It is wise, then, not to pronounce precipitately when the proof is at first negative. When the reaction is positive, when the nitric acid demonstrates the coloring matter of the bile in the urine, the conclusion is absolute—the yellow discoloration of the skin, however faint the tint, is due to the presence of this pigment in the tissues. This is an icterus.

But this, gentlemen,—never forget it—is but the first step in the diagnosis; you ought never to stop here; this notion is absolutely sterile for prognosis and for treatment; these can only be based upon a complete diagnosis. After having recognized the icterus, it is necessary to search out the pathogenetic condition, and the cause; that is to say, after having made the symptomatic diagnosis, it is necessary to proceed to the pathogenetic and nosological diagnosis. Then only are you able to state the grounds for your judgment of your patient, and to come to a rational conclusion for his benefit.

Now, then, our young man has an icterus, and the first point to elucidate is the chronological connection of this icterus with the other symptoms; in other terms, it is necessary to know if the yellowness has been the first disorder, the primitive phenomenon, or if it is a secondary appearance, after a more or less prolonged indisposition. To this prime question our patient has responded by the following information:

He was in perfect health eight days before his entrance into hospital; he was lying down after a moderate meal, and was awakened an hour after by pains, which at first localized themselves at the pit of the stomach, and soon extended over the whole abdomen. This continued scarcely half an hour, and the remainder of the night he was tranquil.

On the next day, which was Friday, this boy was as well as usual, and he went to present himself to the *conseil de revision*. On Saturday all went well until three o'clock in the afternoon, but then the abdominal pains of the evening before returned, compelling the patient to quit his work as a jeweler, and take to his bed. These pains, which he characterized under the name of intestinal colic, occupied the whole belly; they were, however, more marked in the right superior half and did not radiate to any distance. Toward evening the painful phenomena amended, but the fever kept up, along with an obstinate constipation. He passed Sunday thus, and on the Monday following, toward the middle of the day, the face became yellow. The discoloration generalized itself on the morrow, and the patient came to us on Thursday, with his fever and yellowness, but without having experienced any new pains.

Our question, up to this point, is clearly resolved; the icterus has been consecutive; it has succeeded an indisposition of four days, characterized by abdominal pains; and constipation and fever came on upon the third day. This fever we have ourselves observed for many days; the skin was hot, and the pulse maintained itself at eighty-four. Now, the frequency of the pulse being below the mean normal in apyretic icterus, this acceleration of pulse, although slightly marked, is, in the species, a certain sign of fever. In possession of these facts, we ought to make one step more, and seek the origin of this secondary icterus. Following, in this examination, the order of probabilities, the logical order of which I would engage you never to depart from in your clinical investigations, we ought, before everything else, to interrogate the hepatic apparatus itself. Now, all this region was painful on pressure; there were never spontaneous pains, but the contact of the hand, though but a little rough, brought about acute sensibility, and this, at all points occupied by the liver, up to the scrobiculus cordis. Although painful, percussion can be methodically practiced, and it will show that the liver has been increased in volume in all its dimensions; projecting beyond the ribs at least two fingers' breadth, it juts out to the same extent beyond the median line. We thus arrive at this very clear proposition: The icterus is united to an antecedent febrile state, and a painful intumescence of the liver.

This conclusion happily limits the question, it restrains the diagnosis between a congestion and a quasi-mechanical turgescence produced by an inflammatory swelling of the biliary passages.

Numerous are the forms of hepatic congestion, but the age and habitual good health of our patient on the one hand, and on the other side the acute symptoms which he has experienced, permit us to eliminate at the threshold three important groups: firstly the mechanical and passive congestion which results from the impediment to the circulation in diseases of the heart and lungs; secondly, congestion in hæmorrhoidal and gouty patients; thirdly, the congestion with biliary hypersecretion, which is observed in grave pyrexiæ, especially in those which present under the so-called bilious form.

By reason of the actual and antecedent condition of the individual the active congestion, the hepatic fluxion is, to speak truly, the only one which can be seriously entertained. This congestion, which is often the initial manifestation of an hepatic phlegmasia, is very frequent in warm countries;

especially when the heat of the climate is added to the powerful pathogenetic influence of malaria; the individuals who suffer from the liver in these countries often bear with them a special predisposition, in consequence of which they came to present later, in a temperate climate, a morbid complexus of symptoms, which is foreign to the ordinary pathology of the country; if our boy had dwelt in Algeria, or some other of the regions where hepatic affections are prevalent, there would then have been room to count upon this possibility, and for us to demand if the actual accidents are not a manifestation of the remote effects of an anterior climatic impression. This case is superfluous, our patient has never left France.

The affections of exotic origin being thus duly eliminated, we are not, however, completely at ease with the active congestion; one point to which I call your attention ought yet to be elucidated, because it appertains to the practice of our climate. Although rare, fluxion of the liver is, nevertheless, observed in our latitude, but it does not here seem to be developed spontaneously; great eaters and drinkers are, here especially, the subjects. It is also seen in those individuals who though not habitually given to excess at table, or in their drinking, yet have accidentally forgotten their accustomed sobriety; in certain cases, still rarer, the hepatic congestion results, as in every other hyperæmia from the action of cold. Now these divers etiological conditions, upon which you ought always to fix your attention, are totally defective in the present instance. The patient furthermore offers us a symptom which suffices of itself to exclude the active fluxion, the principal causes of which I have already demonstrated to you. This symptom is the decoloration of the fecal matter. It is entirely gray; consequently there is an obstacle to the flow of bile, its natural course is suspended, it can no longer arrive in the intestine. Very well, this is not seen in the divers forms of active congestion which we have passed in review. These fluxions are not produced by a simple hyperæmia, there is in the meantime a hypersecretion, there are congestions with excess of bile, or rather, according to the just expression of Professor Monneret, *secretory congestions*. Now, in such a case, the fecal matters are not decolorized, and oftentimes icterus fails; when it exists, it results not from a mechanical obstacle to the course of the bile, but from the hypersecretion itself, which modifies the condition of the normal diffusion in the roots of the biliary canaliculi. It is this icterus, which one may qualify paradoxically by recalling the contradiction which then exists between the impregnation of the tissues by the coloring matter of the bile, and the persistence of this in the intestines.

We have then eliminated absolutely, and without fear of error, the hyperæmic fluxion of the liver; nevertheless, as the organ is tumefied and painful, as the icterus has been preceded and accompanied by fever, we are forced to attribute the accidents observed to an active process, and catarrhal inflammation of the biliary passages can alone be taken into account. We have here, besides, a sign direct, which it is not always easy to establish, but which in our patient presents itself with remarkable distinctness.

I have told you that all the hepatic region is sensible to pressure, but there is one point where this sensibility is much more acute; this is just at the side of the external border of the rectus abdominalis muscle, in the sinus formed by this muscle, and the costal border; in this place palpation gives a sense of resistance, of profound dullness, and percussion furnishes a dullness which surpasses that of the inferior border of the liver; the contour of this exuberant dullness is convex below and it is sensibly pyriform. If these symptoms were observed exactly on a level with the rectus muscle one might doubt their value, it would at least be necessary to think of errors of tactile sensibility, and plessimeters, which can result from the presence of a thick muscular band; but I repeat it to you, that it is without the muscle, at the side of its external border, that these phenomena are seated; there is, then, no possible illusion, they appertain very positively to the gall bladder; palpation shows it to us resisting and painful, percussion learns us that it is tumefied, it is then the seat of an inflammatory trouble, and the diagnosis thus receives a direct confirmation.

On the other side the inflammation is not certainly limited to the bladder—a simple cholecystitis. In this disease, in effect, especially at its beginning, the passages for the excretion of the bile were free, there was no yellowness, no discoloration of the feces; these two symptoms are a proof that the phlegmasia has passed the limits of the biliary reservoir, and has invaded simultaneously, or a little afterward, the excretory canals, either alone in their track out from the liver (the hepatic canal and ductus choledochus), or also in their intra-hepatic posture. I repeat it, it is not an inflammation of the bladder alone which is concerned, it is also an inflammation of the canals or biliary vessels; the fever and the pains are attributable to this inflammation in its entirety, but the absence of color in the stools, is exclusively due to the inflammation of the canals. These two localizations of morbid work thus having a perfectly distinct symptomatology, it is convenient to designate by special clinical terms. The inflammation of the bladder bears a name especially distinguishing it, *cholecystitis;* it is proper that the inflammation of the biliary canals should be likewise individualized by a name; I can not propose a better one to you than that which has been employed by my friend, Luton (of Rheims), in his excellent work on the biliary passages; this would then be *angiocholitis.* Remark, gentlemen, that, in a clinical point of view, it is this which determines the most striking symptoms: to the cholecystitis are due the circumscribed pains, and the local phenomena of palpation and percussion, but to the angiocholitis are to be ascribed the decoloration of the fecal matters, and the distension of the liver by bile, the exit of which is shut off. I have insisted purposely upon these details, because this distinction of the two phlegmasiæ, according to their seat, is oftentimes forgotten, although it is of really practical importance. The excretory apparatus of the bile is very often taken in its entirety, as in our patient; but the cholecystitis can exist, perfectly isolated, and this circumstance is a further incentive for the separation of these two pathological states.

Angiocholitis, like cholecystitis, assumes two very different forms. The rarest one, is an exudative inflammation, with albumino-fibrous products molded in conformity with the cavity of the organs; it generally goes beyond this degree, and ends in suppuration and ulceration of the bladder or canal. This form, which is observed in fevers of the typhus type, in yellow fever, in pyæmia, in the course of certain chronic maladies of the liver, such as cancer, and during the formation of gall-stones, *lithiasis*, is not generally recognized until after death, because it only manifests itself by fever and pain, the signification of which is veiled by the preexisting malady; as for the icterus, the exudative angiocholitis does not bring it about, except when the inflammatory products have obliterated the excretory canals. In cancer, and the hepatic lithiasis, this inflammation has a slow progress, like the icterus which it produces, and it is the most ordinary cause of perforation of the biliary passages.

The other form is an inflammation which is always superficial, and strictly limited to the mucous membranes; it determines the turgescence and hypersecretion, without exudation properly so called; the cylinders which are then sometimes found in the canals are not the albumino-fibrous products of exudation, they are simply mucous cylinders intermingled with epithelium, resulting from the cellular proliferation of the glandular culs-de-sac, and the increased mucous secretion. This, then, you will see, is a type catarrhal inflammation, and hence, the names, acute catarrh of biliary passages, cholecystitis, catarrhal angiocholitis. It is with this form that we have to do in the actual case before us. I will not revert to the symptoms, nor the march of the inflammation, for our patient offers us a most faithful and complete tableau of them. A single trait has failed in him—that is nausea and vomiting during the first few days, especially at the time of the appearance of the fever.

In all facts of this kind, the pathogenetic mechanism of the icterus is very simple; the turgescence of the mucous membrane, and the accumulation of the mucous secretion obstruct the large biliary canals—the elements of the bile are reabsorbed; in the meantime, if the obstruction is complete, this liquid disappears from the intestine. In certain cases, these incumbering mucosities occupy simultaneously the hepatic canal, the gall-bladder, and the duct, but frequently also, they are limited under the form of a mucous cork, to the duodenal orifice of the biliary canal, and if one is not apprised of this fact, he might overlook it in the autopsy, and judge biliary passages to be free and permeable, which were, in reality, impervious. He may then heap up hypothesis on hypothesis for the explanation of an icterus, which is only obscure, as we have overlooked the condition really productive of it. You may hold it as a certain fact, gentlemen, that most of the jaundices attributed to intricate and spontaneous modifications in the composition of the blood, are all simply icteruses of retention, due to a tumefaction or exudation of the biliary passages; the conditions under which we observe secondary angiocholitis are clearly indicated to you; it is in the typhal pyrexiæ, yellow fever, and pyæmia, that it shows itself; and it is precisely for the icterus of those maladies that there has been invoked an indefinite alteration of the blood. Now, you may remember it as a general rule, that when the interpretation of a morbid phenomenon is based upon mysterious and impalpable transformations, founding its origin in the bottomless depths of the living organism, the chances are two to one, that these great words may be, in a manner, but a fine covering, cast over a shameful ignorance; but the cloak is transparent, it ought never to deceive.

To resume, our patient has been affected with an acute catarrh of the biliary passages, and he has cholecystitis, and catarrhal angiocholitis. His icterus is one of the symptoms of this malady, and he has, as a mechanical condition, mucous obstruction of the canals of excretion. Thus is achieved the complex diagnosis, which I announced to you in the beginning of our undertaking; a diagnosis of the phenomenon by itself, or symptomatic diagnosis; a diagnosis of the cause, or nosological diagnosis; a diagnosis of the mechanical condition, or pathogenetic diagnosis. The icterus with which our patient is affected, is generally designated under the name of catarrhal icterus. I do not like the appellation; it does not tell enough; it adheres to the effect without mounting up to the cause, and neglecting the anatomical substratum of phenomena, it retains something vague and illy-defined, with which vigorous observation has nothing to do. As to the authors who content themselves with this qualification, they are very far from attaching a precise sense to it; it is for some of them a catarrh of the stomach, which is to be understood in this brief formula; it is for others a catarrh of the duodenum; a third group, more conciliating, admits a gastro-duodenal catarrh, while others, in the minority, think a little of the biliary passages, and, amid the confusion thus propagated, it seems as if the attempt to disentangle it would be dangerous. For my part, I voluntarily expose myself to this danger, preferring a periphrasis to obscurity of language; I call a case like this—icterus symptomatic of acute catarrh of the biliary passages—a catarrhal angiocholitis.

Conducted to this point, our task is well advanced, though it is not yet completed. If we will stop here, we shall be embarrassed to formulate a prognosis, and a rational treatment; now, the practical diagnosis is not complete unless it contains these two applications. Catarrh of the biliary passages is rarely spontaneous; it develops itself under the influence of tangible causes, which are, in the order of frequency, gastric, or gastro-intestinal catarrh, digressions from a proper regimen, and the presence of catarrh in the biliary passage-ways. Now, the prognosis and the treatment are not absolutely the same under these different circumstances, and the diagnosis is not accomplished until we have determined the origin of the angiocholitis.

When it is brought about by an acute catarrh of the stomach, the hepatic determination is preceded, during a variable period, by the ordinary symptoms of gastric embarrasment—loss of appetite, bad taste in the mouth, furred, patulous tongue, actual vomitings, constipation, epigastric sensibility or pains, headache, slight chills, more or less frequently repeated, and fever. These are what we observe before the hypochondriacal pains, and before the icterus. If the intestine is interested in the beginning, along with the stomach, the union of symptoms is the same, only diarrhœa is then more frequent than constipation. This variety of angiocholitis is very frequent, I would say, since in forty-one cases, Professor Frerichs established its presence in thirty-three. Nevertheless, I can not admit it in this case. Our patient was in good health up to the moment when he was taken with his hepatic pain. His last meal he took with as much appetite as usual; he had neither nausea nor vomiting; his tongue never showed a whitish coating, thick and characteristic. To admit here an antecedent gastric catarrh would be to gratuitously affirm a morbid state, all the symptoms of which were absent.

As to the errors in diet, to which Beau directed attention many years since, as an exciting cause of pain and swelling of the liver, I can no longer stop to consider them in the presence of the reliable information now in our possession. I am very well aware that the patient was taken with his first pain an hour and a half after his repast, and that just the same thing took place in the cases of Beau; but this similarity does not suffice, and, in all conscience, we are not compelled to admit a departure from proper regimen in a meal composed of roasted meat, some Irish potatoes, and a glass of wine. This second variety is, then, also to be eliminated.

As to the calculous origin of angiocholitis, it is preceded by one or many attacks of hepatic colic, properly so called; and the painful sensations experienced by our patient are very far from being those atrocious pains which patients describe in terms so expressive that one would not fail in having attention directed to them, although he might not observe them in person. It is, furthermore, very rarely the case that the accidents caused by the passage of calculi are accompanied by fever in the beginning; and when, perchance, this is early developed, it presents a clearly remittent, and sometimes a frankly intermittent type. Now, in the actual case before us, we have only been able to discover the vesperal exacerbation peculiar to every kind of febrile movement.

In addition to this, desirous of completely clearing up this difficulty, we have been careful to attentively examine the fecal matters, when the constipation of the patient had been overcome. The examinations revealed nothing. Now, at the moment the turgescence of the gall-bladder had diminished, pressure being no longer painful, and the hepatic dullness commenced decreasing, it was certain that if a calculus was the cause, it had quitted the biliary passages, and that we ought to find it in the intestinal evacuations. The negative result of our search goes to confirm the conclusion, already dictated by the symptoms, that it has not been the migration of a calculus which has originated the accidents.

For these various reasons, I think that our young man of No. 1 has been seized with an idiopathic angiocholitis, favored by a cold and the influence of the season; we are at the spring-time, and it is at this time of the year, and in autumn, that acute catarrh of the bile-passages, like gastro-intestinal catarrh, presents its maximum of frequency.

The prognosis of calculous angiocholitis, ought always to be reserved, if not in consideration of the actual attack, at least in view of the future. The relapses are then nearly certain—here is a first reason for reserve; then because of the special cause of the accidents, there ought always to be counted in, the possibility of a final obliteration of the excretory canals, of their dilatation in the interior of the liver, at the expense of the substance of the organ itself, etc. Briefly, it is not the angiocholitis which dictates the prognosis, it is the calculous affection on which it depends.

Abstracting this variety, one may say that acute catarrh of the biliary passages is a mild malady, and of brief duration. You have been able to establish the fact in the present instance; three days after the arrival of the patient, that is to say, nine days after the debut of the symptoms, five days after the appearance of the icterus, the fever has definitively fallen; under the influence of the purgative draughts of oil, the constipation has disappeared; then the liver has returned to its normal volume, the fecal matters have recovered their brown tint, and at this moment, the color produced in the urine by nitric acid, has diminished in intensity; since yesterday, the fifteenth day, counting from the beginning, the reaction has totally failed, the patient is perfectly cured. The light yellowish tint which you yet see in him, does not at all indicate that the bile is continuing to be reabsorbed in the liver, it results simply from the anterior impregnation of the epidermic layers by the bile pigment, and for its disappearance, it is necessary that the epidermis should be effectually removed.

In idiopathic angiocholitis, in that which results from indiscretion in diet, the treatment does not at all differ from that which we have used; rest in bed, dieting during the continuation of the febrile movement, acidulated drinks, such as lemonade or citron, or nitric lemonade (twelve drops of acid to the *litre*, with 60 grammes of syrup), finally, mild purgatives, castor oil, cream of tartar, Glauber's salts—such are the means of this medication. When the biliary catarrh has succeeded to a gastric catarrh, it is proper to commence the treatment with a vomit, which has the advantage of modifying the initial morbid state, and favoring the expulsion of the mucous products obstructing the excretory canals. It is proper to say, that this means ought to be completely left aside, whenever we have doubts as to the existence of a calculus. Finally, when the symptoms of intestinal catarrh dominate, when diarrhœa exists, you will abstain from purgatives from the beginning, and will with advantage give for days in succession Dover's powders, in doses of from 8 to 12 grains daily; independently of its modifying influence upon the intestines, this medicine has the advantage of calming the pains; you know that 55 centigrammes of this powder represent 5 centigrammes of the extract of opium. Once the pains abated, and the diarrhœa arrested, you can, if the icterus persists, administer a purgative, with the view of acting mechanically upon the obstruction of the canals, through the medium of hepatic hypersecretion.

The individuals who have been affected with catarrhal angiocholitis sometimes suffer with an anorexia of which they complain very much; it is necessary, then, to have recourse to bitter tonics. I would recommend you particularly in this case, to use the infusion of Peruvian bark, sweetened with the syrup of orange-peel; you will cause two cups to be taken a day, and this means will rarely fail in accomplishing your end. If, in the meantime, there exists a tendency to constipation, you should rather choose for a drink the infusion of rhubarb in laxative doses: 10 grammes, for example, to 500 grammes of water.

Catarrh of the biliary passages, outside of the calculous affection, is subject to relapse. We see individuals who each year experience one, or even two attacks, at the seasons I have mentioned. It is here an unfortunate disposition, which ought to be combated, since this phlegmasia by repetition, however mild though it be, can bring about, in the long run, permanent modifications in the caliber and permeability of the canals, and react, finally, upon the liver itself. It behooves us to restrain persons thus predisposed, to a severe regimen, from which all irritating substances ought to be excluded; constipation ought carefully to be prevented, and it is useful to cause to be taken, from time to time, a weak infusion of rhubarb with the bicarbonate of soda. It is in such cases, also, that the mineral waters render true service; you can prescribe either the chlorinated soda waters, such as Bourbon L'Archambault, Salins, Hombourg, or Kissingen; or the sulphate of soda waters of Plombiéres, Carlsbad, or Marienbad; or, finally, the bicarbonate of soda waters; among others, those of Soultzmatt, Vichy and Ems, occupy the first rank.

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

SPRING HILL, MAURY CO., TENN., 1870.

EDITOR OF THE RICHMOND AND LOUISVILLE MED. JOURNAL:

Dear Sir: Below I furnish you with cases occurring in my practice, which may possibly possess some interest:

CASE 1.

In 1866 I was called to see Laura, a colored girl, aged 17, and found her suffering with an enormously distended abdomen. Her friends thought her to be pregnant. Her mother informed me she had never menstruated, and had used many remedies with her. She had a troublesome cough, with difficulty of breathing, and an excited pulse. Upon examination I found her liver pushed above the ribs by the contents of the abdomen, forming a strange and unnatural tumor on the right side; and upon attempting to explore the vagina, the hymen was found to be imperforate, a fluctuating tumor being felt between the labia. I had her placed on the floor, and at once made an incision through the hymen, three-fourths of an inch long, when the retained menstrual fluid was ejected with astonishing force, to the distance of ten feet, perhaps, the flow continuing for several minutes. I estimated the quantity escaping at five or six gallons.

Her abdomen immediately became round, smooth, and symmetrical, no unfavorable symptoms ensuing; and in a day or two she was following her ordinary occupations. She has ever since continued to menstruate with perfect regularity.

In the number of your journal for this month is the record of an operation for imperforate hymen, with retention of the menses, by Dr. C. R. Drysdale, who attributes the recovery of his patient to the very small opening made at first through the hymen, the liquid continuing to flow for five days. Why there could be any necessity for an exceeding small opening at first I can not say.

In the same journal Dr. Holloway reports a case of metritis, following an operation for traumatic occlusion of the vagina, which he thinks "was due to the mistake made in effecting a rapid evacuation of the accumulated menstrual discharge." Was this not due to the wound made by the "very large trocar, piercing the center of the occluding cicatrix?" Yours, etc., A. C. White.

REVIEWS AND BIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

Art. I.—Essentials of the Principles and Practice of Medicine. By Henry Hartshorne, M. D. Philadelphia: Henry C. Lea.

It is not often that the Medical Press has aught to say in favor of manuals in medicine or surgery, and when an exception to the rule in this respect can be made, it is a source of pleasure, as well as a duty to do this clearly and prominently. Dr. Hartshorne's manual has now reached its second edition, and this edition is in every respect an improvement upon the last. It is not only "revised and improved" descriptively upon the title page, but the labors of the author in this respect have been faithful and judicious. What is unusual in manuals, the physiology and pathology embodied in this work are creditable exponents of the improvements and progress made in these departments; and, if the dogma of Bennett be true, that pathology constitutes the basis of rational medicine, it is surely a great advantage to all who seek concise information in this connection, to be informed that in this work of Dr. Hartshorne they will find very much to instruct and very little to disappoint or mislead them. As the first edition was reviewed in this journal, it is not necessary to describe the plan and general arrangement of the work. It is worthy of confidence and support. E. S. G.

ART. II.—NOTES ON THE PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM. By MEREDITH CLYMER, M. D. New York: D. Appleton & Co. 1870.

This *brochure* contains, in a neat and acceptable form, the series of papers contributed by their efficient and accomplished author to the *New York Medical Journal.* Dr. Meredith Clymer has added, not only by judicious compilations but by original research and most valuable suggestions, to the knowledge of the profession on these subjects, and these papers alone, were he not previously known as an accomplished writer, would give him a most creditable position before the medical public. He has in this last contribution presented valuable information in regard to disseminated sclerosis of the brain and spinal cord, and annular or cortical sclerosis of the spinal cord. All who desire instruction upon these subjects can obtain this publication from the publishers. E. S. G.

ART. III.—FIRST ANNUAL REPORT OF THE CHILDRENS' HOSPITAL. Boston: John Wilson & Son. 1870.

Now that municipal bodies and philanthropic individuals are devoting such important and general attention to the best means of protecting invalid and helpless children, such reports are most valuable and useful. In this report the object of those interested is not discussed in detail, nor is the subject so interesting to all, how shall such children be protected, analyzed in any way, but the paper is mercantile in its arrangement and general appearance. It is still, however, welcome, inasmuch as it shows that after a fair experiment, on a scale sufficiently large, the result has been in the main satisfactory. The pecuniary condition of the hospital shows that it has been so far an entire success. E. S. G.

ART. IV.—THREE CASES OF IMPERFORATE ANUS. By I. H. POOLEY, M. D., Yonkers, New York. New York: Townsend & Adams. 1870.

Dr. Pooley has contributed an excellent pamphlet on this subject. While cases of imperforate anus are not rare, they are not seen sufficiently often to render the proper method of relief generally known. That operation is necessary, all of course admit, but the details of the operation are by no means similar in the practice of the profession. For this reason, and on account of the unquestioned merit of Dr. Pooley's contribution, very many will, of course, desire to obtain his paper. It may be obtained of the publishers, or in that valuable and able journal, the *American Journal of Obstetrics*, for May, 1870, in which it was first published.

E. S. G.

ART. V.—WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY. S. Angell. 1870.

It is hoped that not many desire to learn when and where women can be converted from gentle maidens or modest wives, into inquisitive anatomists or brazen operators; but, if there be any unfortunate enough or curious enough among the readers of this journal, to wish for such knowledge, it is proper to say, that by sending for one of these circular announcements they can be fully gratified.

E. S. G.

ART. VI.—ANNOUNCEMENT OF THE WOMAN'S HOSPITAL MEDICAL COLLEGE. Chicago: Robert Fergus' Sons. 1870.

As Chicago does not desire to be outstripped by New York and Philadelphia, in the manufacture of anything which contributes to "put money in thy purse," she also has opened a factory wherein the inmates are taught to be skillful, not in the mysteries of the distaff and the magic of the loom, but in the mysteries of male and female anatomy, and in the magic of the sound and catheter. In this modern factory, as in others, the inmates are "girls;" but whereas, factory-girls generally seek to become skilled in arts utilitarian and beautiful, the "girls" in this new factory are striving to learn all that females generally blush to hear, and men, only of necessity, learn. This factory is known as the Chicago Woman's Medical College. E. S. G.

ART. VII.—FORTY-FIFTH AND FORTY-SIXTH ANNUAL REPORTS OF THE RETREAT FOR THE INSANE. Hartford, Conn. 1870.

This report gives a very complete and interesting account of this institution; not only as regards its present, but its past condition. It serves to demonstrate the complete triumph of modern architectural science over any obstacles that the blindness or stupidity of former generations has presented. This old "barn," totally unfit for the purposes contemplated, has been converted into a beautiful representative of all that is graceful and welcome in modern architecture. Surely there is no more pleasing picture of the lovely elements in human character, and no more convincing proof that such character is not (as is often claimed), heartless and unfeeling, than is presented in this report; wherein those whom God has blessed with mental health and material prosperity are seen to turn away from the vanities of social life, or from the allurements of the market place, to care for the imbecile and to protect the demented and the lost.

This institution has been thoroughly remodeled, and is now a credit to all who have been instrumental in improving and beautifying it. In the report there is one statement made in regard to the laws of radiation, which, it is safe to say, will cause much dispute and denial. It is in connection with the explanation as to the method of warming the building, and is as follows: "The rays of heat, given off from any hot body, do not heat pure air through which they pass, but go straight on until obstructed by some solid body; therefore, by placing this heating surface directly in the room, the persons therein may be warmed by these rays of heat, and still have the air cool and invigorating for breathing." If such an effect can be practically established, there would not be one fire-place where there are now thousands. The manifest, demonstrable objection to all radiators is, that they heat indirectly the air, and render it repulsive and debilitating. This report embodies much to interest and instruct. E. S. G.

ART. VIII.—TRANSACTIONS OF THE MEDICAL SOCIETY OF WEST VIRGINIA. Wheeling. 1870.

These transactions give gratifying evidence that the physicians of West Virginia are active and progressive. There are presented many original papers, and some give evidence of creditable research; the list of these papers is as follows, and they are published in order, after the report of the official proceedings:

Report on the Climatology, Topography, and Epidemic Diseases of Wood county, by E. D. Safford, M. D.; New Remedies, by W. H. Sharp, M. D.; Hydrate of Chloral, by John C. Hupp, M. D.; Meteorology and Epidemic Diseases of Ohio county, by E. A. Hildreth, M. D.; Stone in the Bladder and Urinary Passages, by John Frissell, M. D.; Surgical and Medical Appliances, by J. K. Berkebile, M. D.; Medical Appliances, by H. J. Wiesel, M. D.; A New Stethoscope, by H. J. Wiesel, M. D.; Cephalic Version, by L. T. Nichlin, M. D.

It will be admitted that this is a most creditable array. Dr. Wiesel makes a statement that will surprise many; he endeavored to obtain a sphygmograph, but failed; when one of his colleagues told him that only one had ever been imported to America. There are few cities in which there are not several.

The report of Dr. Frissell is one of the most remarkable ever published by a society. As he is a physician of prominence in West Virginia, and as his statements, erroneous, untenable, and injurious, may be received, without questioning, by many, it is well to devote a short space to their examination. The spirit of the paper is highly censurable, and deserving of public reproof. In many cases, Dr. Frissell dwells upon the fact that he had made a correct diagnosis of urinary calculus when other physicians, some names being given, had not only failed, but had treated the patients for other troubles. In the writings of any one, this would be highly censurable; but when found in the writings of one who manifests much ignorance, not only of his subject, but of the language in which he attempts to present it, such a course is not only censurable, but weak and foolish. Whatever be the folly of such an act, however, it becomes invested with even the dignity of wisdom, when compared with that of ridiculing such men as Professors Nathan R. Smith, of Baltimore, Henry H. Smith, and Joseph Pancoast, of Philadelphia, for operating by lithotripsy. Indeed, not only is this done, but Dr. Frissell is graceless enough to affirm, that in the cases operated upon by these distinguished gentlemen, the patients were made worse, and that the operation contributed to hasten the period of their death. Where one thus comes into the field with abuse, threatening and bravado, it is at least admissible to examine the armor in which he is clad, and if a few tentative and explorative thrusts, made through the gaping joints of this armor, penetrate unpleasantly parts believed to be invulnerably clad, so doughty a warrior must not cry out or wince. The thrusts, like those given by Tybalt to Mercutio, shall not "be as deep as a well or as wide as a church door," but it is hoped that they will be sufficient to make their recipient, as Mercutio was made, "a *grave* man."

In examining this report of Dr. Frissell, the reader is first overwhelmed by the startling statement that the success of the great lithotomist, Dr. B. Dudley, of Kentucky, was due to the fact that "in Kentucky, where the great operator resided, almost every second man had a stone in the bladder." Apart from the stupendous ignorance here manifested in regard to the American medical literature connected with this subject, it is evident that Dr. Frissell has formed a most sad and lugubrious estimate of the physical ills and distresses of the Kentucky people. Can the reader imagine an affliction more appalling than that which Dr. Frissell believes to have oppressed and to be now oppressing the melancholy citizens of this State? One-half of the population, including the women and children, walking about with a stone in the bladder! The chances being even, that every man or woman to whom one is introduced, is heroically devoted to nursing his or her pet calculus for some Western museum! Where could there be only longer the least admiration for Civiale's magnificent collection of calculi, when it was known that there lived a people whose unfortunate bladders are devoted to so cruel a destiny! Indeed, if but half of Dr. Frissell's estimate were correct, the most lucrative employment in Kentucky would be a wholesale system of contracts with her citizens for the delivery of their calculi, and with these McAdamizing, for a proper remuneration, the highways of the commonwealth. How the heart of the enthusiastic surgeon leaps at the thought of such a ride! To sink calmly and majestically back in the soft upholstery of a cradle-like vehicle, and, as its wheels crunch these vesical contributions of a public-spirited people, to wander in dream-like speculation over the possible clinical history of the multitudinous host who had partially and so prematurely lapsed into this roadside dust! Seriously speaking, this public statement of Dr. Frissell is respectfully referred to the Kentucky Board of Immigration, for how can these gentlemen ever expect to seduce to this State any addition to her population, when it is known what a cruel destiny awaits them? The commissioners have full authority for saying that, notwithstanding the statements of Dr. Frissell, urinary calculus is by no means commonly seen in this State; and, indeed, they can say, with equal safety, that Dr. Frissell does not know as much of this matter as they do.

Dr. Frissell, after giving serious currency to the mythic stories in regard to the frequency of the operations performed by Pierre Jacques, and thus detracting from the deserved eulogy bestowed upon Dr. Dudley, gravely informs his readers, not only that Cheselden and Jaçques were contemporaries (a blunder of over a century), but that in 1750 "surgical knowledge was very limited," and, consequently, that any one who undertook to operate for stone "could command the business of nations." How the bodies of the great surgeons of the past century must writhe in their graves when a medical society gives currency to such a libel.

In a comical species of preface Dr. Frissell recommends "a sharp knife," as it "facilitates this operation;" the operation for stone differing, of course, in this respect, from all others. Next, the reader is seriously told, that if "one or two lateral incisions are made in the bladder," when there is insufficient space for the calculus during the lateral operation, these incisions "convert the operation into a bi-lateral operation."

Dr. Frissell's first patient suffered from a calculus the size of the egg of a goose, and to this calculus the bladder was firmly adherent, there being no space intervening between the calculus and bladder, save on the lines drawn from the ureters to the urethra. The reader will appreciate the possibility of this when he recalls the size of the adult bladder (the patient was twenty-four years of age), and that of the egg mentioned. This patient recovered, and "followed teaching for some time;" and lest any one should detract a leaf from the operator's laurel crown, he states that he "operated on the case, and managed it, from beginning to end, myself."

The next case, a little boy, whose prominent symptoms were that he "had severe turns of screaming," did equally well, and for similar reasons. The next case "took spasms," but it finally recovered.

The next case of interest is that of an old man of seventy years of age. He was believed to have "stone." No steps were taken to ascertain the character of the calculus, though surgeons of authority would have refused to do anything, until this was done; for surely no one would cut a patient of this age, unless for the removal of the mulberry calculus. As he was found to have "stone," however, it was decided that he must be "cut." This decision was absolute, yet, after it had been announced as final, the reader finds Dr. Frissell endeavoring to fortify his decision by a comic illustration of the argument by exclusion. It being admitted by himself, by the patient, and by all parties concerned, that the patient was seventy years of age, he still doggedly reasons as follows: He "is not an infant just passing into childhood, nor (as though the reader might admit the first proposition and deny the next,) a boy of four or eight or eleven years of age; he is not a young man of twenty or thirty, but an old man, well started in his second childhood, with an enlarged prostate gland." The diagnosis having been thus scientifically made, the operator, next, after having decided to operate, propounds this most conclusive syllogism: "He may not recover if we operate; he cannot live long as he is; the time that he does live will be a period of suffering; it may be that a small fistula will remain; he might recover."

As from such premises no conclusion could, by the ordinary rules of logic, be determined, an appeal was made to that eminent logician, the patient, who, "in the midst of his pain and suffering, at once said, that was what he wanted." As this want was assumed to be one for the performance of the operation, the dilemma was solved, and the operator decided to do what he was then present to execute. Who does not recall here the speech of Douglas Jerrold's immortal lawyer, "May it please yer Honor, if the patient is tried he may be hanged; if he is not tried he will rot in Old Bailey; therefore, yer Honor, I stand ready to go on with the case."

The preparations were, therefore, duly made; the patient chloroformed, the cut duly made, and the stone safely extracted? No! lamentable to relate, this ridiculer of the diagnosis of others, this censor of Drs. N. R. Smith, Henry H. Smith, Pancoast and others had made a great and ludicrous blunder; there was no stone. A "calcareous" coating of the bladder was discovered. The most wonderful part of this little episode is yet to come. The patient recovered and made no more complaints. With such a surgeon, such a course was certainly the part of true wisdom. To have a hole cut in the bladder for "a calcareous" coating is enough to cause silence in any patient.

Lithotripsy, with all of its advocates, Dr. Frissell contemptuously repudiates. Sir Henry Thompson's teachings and Sir William Fergusson's lessons are all ridiculed by the distinguished lithotomist of West Virginia.

In the specimens of calculus removed by Dr. Frissell are "the uric acid, phosphate and *oxolate* of lime." Much more might justly be said in criticism of this remarkable paper, betraying, as it does, such bad professional spirit, such ignorance in regard to the subject discussed, such literary, grammatical and surgical blunders, such censoriousness toward writers and operators of distinction; but what has been written must suffice. The press would err seriously to have said less. In conclusion this report may be best dismissed in the language of its author: Its teaching "amounts to but little, it belongs to ourselves, and can be found nowhere else." E. S. G.

ART. IX.—THE REMEDIES WE USE. Nashville, 1870.

This is a very welcome little pamphlet on the subject of which it treats. It is well prepared and neatly published.

ART. X.—REPORT OF THE FACULTY OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISIANA IN REGARD TO THE CONVENTION OF MEDICAL TEACHERS AT WASHINGTON CITY. S. M. BEMISS, M. D. 1870.

This report of Dr. Bemiss furnishes a concise account of the errors of omission and commission at the Medical Teachers' Convention at Washington, in May last. There is one fact worthy of record which receives full attention from Dr. Bemiss; it is that the only representatives of medical colleges, who were ready to pledge their Faculties to any course of improvement whatever, were the representatives from the West and South. The rest were not prepared to say or do anything definitely. Dr. Bemiss, like all who have spoken honestly in this connection, is hopeless of good from such a source. He believes the convention wagon was overloaded with its archives, and that the team undertaking to draw it was manifestly too weak to do so. He suggested no other remedy for the disastrous condition existing than the resolution of each school to do all that it is able. It must be confessed that such a prognosis is tantamount to wholesale disaster. The associations and the school conventions have failed to do anything in this connection, and the profession must move in this matter or there must soon be results inexpressibly disgraceful and destructive to the honor, respectability and efficiency of American medicine.

ART. XI.—HISTOLOGY OF MINUTE BLOOD VESSELS. By BREVET LIEUTENANT COLONEL J. J. WOODWARD, ASSISTANT SURGEON, U. S. ARMY. Washington, D. C.

This contribution of Dr. Woodward is not surpassed by any that for many years have been made to medical science. The micrographs can not be surpassed in Europe and it is doubtful if they can be equaled. One is at a loss which most to admire, the instruction conveyed by them or the beauty and utility of their execution. The lacunæ of the blood vessels are most beautifully, indeed triumphantly, demonstrated, and the emigration theory of the white corpuscles during the second stage of inflammation, as taught by Cohnheim, is fully and apparently finally vindicated. It is a pleasure to commend such valuable contributions to science, and it is to be hoped that all of the medical colleges of this country may be supplied, not only with the micrographs mentioned, but by the explanatory and valuable pamphlet which accompanies them. E. S. G.

MISCELLANEOUS.

"Non omnes eadem mirantur amantque."

On the Treatment of Acute Orchitis. By J. ROUSE, Esq., Assistant Surgeon to St. George's Hospital.—There can be little doubt that, as a rule, the secreting structure of the testicle is entirely unaffected in the acute orchitis following gonorrhœa; and that the disease is a diffuse inflammation of the connective tissue of the part.

If we refer to the various authorities as to the treatment to be pursued, we are surprised at the active, not to say violent, means adopted to subdue the inflammation, the character of which (established as it is by the excellent observers quoted) seems to be quite overlooked. Mr. Curling recommends antiphlogistic treatment: "Acute orchitis, if treated quite early with nauseating doses of tartar emetic, usually subsides rapidly, so that this plan renders local depletion unnecessary." "Tartar emetic may be prescribed in camphor mixture, with small doses of sulphate of magnesia and tincture of henbane. Pain and constitutional derangement may be relieved by one or two grains of calomel, combined with eight or ten grains of Dover's powder, or half a grain of morphia taken at bedtime. In addition to these active measures, leeches along the cord, or bleeding from the veins of the scrotum, is recommended." The treatment by antimony, calomel, and local bleeding seems active enough; but it was reserved for Mr. Henry Smith to recommend a very startling method of cure.

A patient suffering from acute gonorrhœal orchitis, with an unusual amount of swelling and pain, came under Mr. Smith's notice in July, 1863. From the severity of the symptoms it was thought that suppuration must have taken place, and a free and deep incision with a bistoury was made with a view of letting out the pus. To the dismay of the surgeon, a little serum and blood escaped, and the tubes of the testicle protruded through the wound. Two days subsequently the patient was quite free from pain, the swelling and redness had almost disappeared, the protrusion no longer existed. Mr. Smith was so struck by the fortunate termination of the case, that he determined to try the same treatment in other cases; and finding the method of "making a free and deep incision" give relief to pain, Mr. Smith was led to adopt it as the usual treatment of acute orchitis. No one can doubt Mr. Smith's statement of the result of his experiment; but from what has already been stated with reference to the pathological condition of the testicle in cases of gonorrhœal inflammation, we may safely conclude that Mr. Smith's idea that "the free division of the fibrous tissue enveloping the body of the testis, and the consequent removal of tension from the organ, was the secret of success," was erroneous.

Severe and unnecessary as the treatment seems to me, I think it is to be preferred to the calomel-and-antimony treatment still in vogue, for in all Mr. Smith's cases treated by incision no other remedies were employed, and the patient escaped all the horrors which Mr. Smith in his paper so well describes, that I am tempted to quote his words: "We all know what a terrible ordeal of violent remedies a patient with acute inflammation of the testicle has to undergo. In the first place he is obliged to lie in bed for several days, a large number of leeches, or the constant application of ice, being necessary to relieve the pain; and at the same time the unfortunate wretch is compelled to undergo the process of severe purging and continued nausea by repeated doses of salts and tartar emetic, before any decided mitigation of his symptoms ensues.

Having thus briefly discussed the treatment usually adopted for acute orchitis, I must now lay myself open to criticism by stating that, in my opinion, the simplest, most satisfactory, and most efficient treatment is by opium. Until three years ago I was in the habit of treating all cases of gonorrhœal orchitis with calomel and opium, *i. e.*, two grains of the former with one of the latter, night and morning; and I never found it necessary with this treatment to give antimony, or to make use of local depletion. I object to antimony, not only because it is unnecessary, but also for the reason that patients with orchitis almost always complain of nausea; and it seems to me cruel to add more to the patient's sufferings than can possibly be avoided. Local blood-letting is undesirable: firstly, because it is unnecessary; and secondly, because, if the leeches be applied to the scrotum, it is often difficult to arrest the hæmorrhage without causing the patient pain. In private practice there are many inconveniences connected with blood-letting in such cases, and these ought to have due weight with the surgeon. I was induced to leave off giving calomel in these cases from having observed the following case. I was sent for late one night to see a gentleman, who was said to be dying; and on my arriving at his bedside, I saw him in what appeared to be tetanic convulsions. I was told that he had been suffering from orchitis, and that, at the advice of a medical man, he had been taking calomel and antimony, and rubbing blue ointment into the scrotum over the inflamed testicle. The suffering was so acute that the poor fellow was screaming with the pain; the pulse was 160, and there was profuse sweating. I found that he was already salivated; the testicle was enormously swollen, acutely tender, (as well it might be), and looked as if suppuration was going on. Hot opiate fomentations were applied to the part, and a large dose of opium given. The following morning the pain had subsided; and finding so much improvement, I continued the opium and the fomentations. I confess I was surprised to find that in three days, without any other remedy save a purge, the pain quite vanished, and the swelling and tenderness considerably subsided. In the course of a few more days the swelling had quite gone, and the patient was able to resume his usual avocations. This case was so striking in its result, that I resolved to treat the next case I met with in the same way, and see whether the opium really influenced the course of the malady, or whether it had only been useful to allay the irritation set up by injudicious treatment. Accordingly, in the next case that came under my care, having first purged the patient with an ordinary senna draught, I commenced giving a grain of opium night and morning. The pain was quite relieved after two grains had been taken; and in three days all the tenderness had gone, and much of the swelling. I then, bearing in mind the pathological condition of the organ, prescribed twenty drops of the acid tincture of steel three times a day; and in a week from the commencement of the treatment the patient had quite recovered. Since that time I have always treated acute orchitis on this plan. My colleague, Mr. Pick, and several of my friends who have been induced to try it, have met with equally satisfactory results; so that I think I am not carried away by my own prejudice when I advocate this simple treatment in preference to the old and complicated one.—*St. George's Hospital Reports, Vol.* iv., 1870, *p.* 251.

A New Remedy for Catarrh.—A recent number of the *Heilbronn Memorabilien*, (Germany), contains the following resume of an article on the nature and treatment of Catarrh, by Dr. M. Frank, of Munich.

Nasal Catarrh should always be regarded as an infectious disease. The infectious principle is chiefly transmitted to the nasal passages in the air of respiration, which very soon manifests its action in a profuse watery secretion from the mucous surfaces. The affection is then propagated along the lachrymal ducts to the conjunctival membrane, into the pharynx, Eustachian tubes, larynx, trachea and bronchial tubes, with the accompanying train of symptoms in these organs; or the affection may extend down the œsophagus, into the stomach and intestinal tract, with the corresponding morbid phenomena. In most instances, where the intensity is not great, it runs its course in from seven to eleven days. With many the febrile state, sense of weakness, and feeling of discomfort generally are so great that the patient will take to his bed, or the necessity of continually cleansing the nostrils, or sometimes the just appreciation of the danger to others, will cause him, for the time being, to avoid all society.

The constant neglect of colds, or ordinary catarrh, on account of its being regarded a trivial affection, is a matter of daily observation, and which led Hufeland to assert that a greater number of people died of it than from the pest.

Dr. Frank recommends the following treatment, which he has practiced for two years, with constantly favorable results:

Immediately on the approach of the first symptoms in the nasal passages the patient is directed to use a weak solution of the hypermanganate of soda as a disinfectant.

Enough of the hypermanganate is added to a goblet full of water to give it a cherry red color.

A handful of this solution is snuffed up the nostrils every couple of hours, using the precaution to blow out carefully after each operation. If the pharynx has become affected, the same should also be used as a gargle. Usually before the end of the second day all symptoms have disappeared.

Treatment of Eczema.—Dr. Kent Spencer, of Bath, has found black wash useful as an application in eczema rubrum of the legs, mixed with a tenth part, by measure, of glycerine. Linen rags are soaked in this and laid on the parts and kept *in situ* by a bandage, but no oiled silk used. He renews the dressings twice daily, wetting them with warm water before removal. He has recently almost always been successful in such cases by this plan.—*Canada Medical Journal.*

Elephantiasis Treated by Ligation.—Dr. D. C. McCallum, of Montreal, communicates to the *Canada Medical Journal* a case of elephantiasis arabum, cured by ligation of the femoral artery, which he declares was the first case ever so treated after those of Professor Carnochan, of New York, who originated the plan of treatment. Since that time a number of cases, successfully managed by the ligature, have been put on record.

Bayard Taylor on Quacks.—"I am not bloodthirsty, but I should feel little grief if the Indians were to pounce upon and carry off, beyond the reach of rescue, every agent of quackery who defaces the finest scenery of the road. Can not the two great railroad companies prevent this outrage? At the Sherman Summit, along Green River, in Echo and Weber canons, in the Humboldt Palisades—wherever there are noble masses of rock—you find them painted with the unclean shibboleth of the quack. Heaven forbid that I should mention *whose* bitters, or lotion, or dentifrices, thus proclaim the vulgarity of its advertiser; but I have vowed never to use any such bitters, or lotion, or dentifrices, and I advise all overland travelers to do the same. The sight of this vile defacement—which no other country in the world would tolerate for a day—was the only disagreeable circumstance on my journey to and fro."

Dangers of Chloral-Hydrate.—Thus far the new soporific appears remarkably exempt from the unpleasant after-effects attaching to opium, chloroform, and other agents of the class, and still more remarkably free from noxious results in large doses. But it is wrong to assert its harmlessness. We know of one case, at least, in San Francisco, in which alarming narcotism resulted from a large dose; the patient, a young man, passing several hours in a deeply comatose condition. The journals record the case of a man in Guy's Hospital, with thoracic aneurism, who took thirty grains to allay pain and procure sleep. He became unconscious, with lividity and coldness of the face and hands, and respiration only at long intervals, death seeming imminent for five hours. Dr. Habershon remarks, in commenting on this case, that chloral tends to cause bronchial and pulmonary congestion, through its action on the pneumo-gastric nerve, and that it should not be given where embarrassment to respiration is liable to occur. Other cases begin to be reported, illustrating its toxic effects in large doses. As its use extends, such cases will multiply. Valuable as it is, beyond all doubt, the discreet and conscientious practitioner will not administer it recklessly, and without fear of consequences.

Difference in the Milk of the two Breasts.—M. Louis Sordat (*Gazette Hebdomadaire*), lays before the French Academy of Sciences the results of some experiments to determine the difference, if any, between the milk of the two breasts of a nursing female. He found the milk of the right breast more abundant, and richer in butter, cheese and albumen. The proportion of saline matter was equal. He observed that infants were apt to prefer the right breast. Query: Do not all these results grow out of the habit of carrying the child so that it shall nurse most from the right breast?

Subcutaneous Section of the Os Femoris.—Dr. Adams describes, in the *Lancet* for January, 1870, an operation performed by him on an anchylosed thigh. He pierced to the bone with a long, small knife, and divided the bone within the capsular ligament with a fine saw, and then straightened the limb. The wound closed without suppuration, and without a single bad symptom. The limb was capable of some movement, and, whether or not a useful joint would be formed, the leg will be of much use.

Simple Method of Arresting Obstinate Epistaxis.—A writer in the *Gazette des Hopitaux* states that attentive observation of the face of a patient attacked with epistaxis will detect a slight intermittent movement of the soft parts near the ala of the nose on the side where the blood is flowing; even if this pulsation be not seen, it may be felt. Pressure with the finger over this branch of the facial artery is said to arrest the hæmorrhage immediately.

Laudanum Drinking.—The *Philadelphia Medical and Surgical Reporter* refers to a lady in Baltimore who has consumed 5,840 ounces of laudanum in the last two years. That is an average of half a pint a day.

Drugging Malt Liquors with Snuff.—In the investigation of a case lately made by the coroner in this city, a chemist testified that he examined the contents of the stomach of the person deceased, and tested them for tobacco. The idea was novel to many persons; but it was explained by the fact that snuff is sometimes mixed with beer and malt liquors, for the purpose of stupefying those who drink it. The *Medical Press and Circular* says it is a common practice among a certain class of prostitutes in London to treat their intended victims with malted ale or stout, sprinkled with ginger, into which a few pinches of snuff have been introduced, and that they carry snuff about their person for this purpose. Young men sometimes do the same thing one to another, for mischief.

Rapid Cure of a Pleuritic Exudation by abstaining from Water and Watery Aliments.—Nov. 20, 1869, a man 43 years of age came into Professor Niemeyer's hospital, with a pleuritic exudation in the right side, of two weeks standing. The effusion reached to the third intercostal space. No fever. The patient was compelled to abstain from drinks and fluid aliments for several days. Some bread and a little salty sausage were allowed. He ate the bread, but could scarcely taste the sausage; his tongue was so dry that swallowing was nearly impossible. Sometimes he took a small piece of apple, and was contented by putting the tongue to the window glass. Nov. 23, the dullness was below the nipple. From the 24th, the patient drank half a pint of wine daily. Nov. 27, the dullness over the liver normal. For two days, a rubbing sound in the pleural region. The patient went up stairs rapidly without much trouble. Eating and drinking allowed, but no appetite. The patient, having had only one stool during the whole time, took a purgative. The following day (28th) he was discharged, cured.

Action of Purgatives.—There are, perhaps, few points on which our information is less complete than in regard to the mode in which purgative medicines operate. Yet they are administered by practitioners of all shades of opinion with a freedom from hesitation or doubt that would lead an unprofessional observer to believe that their mode of action must have been thoroughly investigated, and that the laws governing their action must be accurately understood. In some instances, indeed, an explanation has been advanced; but this generally proves extremely unsatisfactory on close examination. Take, for instance, the alleged explanation of the purgative action of the neutral salts—such as sulphate of magnesia. We are told that they only act as purgatives when their concentration is greater than that of the blood, and that they must promote excretion and exhalation from the intestinal mucous membrane by a kind of exosmotic action. But surely this is not sufficient to account for, and we apprehend that few would be inclined to accept it as truly representing the action of these remedies. In other cases we are called upon to admit a local irritant action, as in the case of croton oil, senna, and rhubarb; but whether these affect the vessels alone and primarily, or the sympathetic system of nerves primarily and the vessels secondarily, is at present a matter of speculation. While, lastly, of the action of those remedies that, like elaterium and podophyllin, contain an insoluble resin as their active principal, and purge smartly in exceedingly small quantities, no rational explanation has as yet been advanced. Some experiments have, however, lately been made by our neighbors, indefatigable in science as in war, with a view of elucidating the action of the resinous purgatives, to which we shall call the attention of our readers.

In the first place, Hagentorn, from numerous experiments made with the resin of the convolvulus, or convolvulin (allied to the resin of jalap and scammony), on cats, has shown that neither the resin itself nor the salt of the resinoid acid is capable of producing purging when rubbed into the skin or applied to the mucous membrane of the nose or stomach, or even when injected into the jugular vein. As much as sixteen grains of convolvulin might be introduced into a loop of intestine, the contents of which had been carefully expressed and a ligature applied above and below, and it might even be allowed to remain for twenty-four hours, without producing any other effect than that of reddening the mucous membrane. Untiedt repeated and confirmed Hagentorn's observations; and noted further, that subcutaneous injection of the convolvulinic acid was inoperative. He also introduced the resin into the rectum, both pure and combined with taurin and with choloidinate of soda, and still found no action; but he made the important discovery that if the resin were mingled with bile or with the biliary acids solution quickly occurred, and violent diarrhœa speedily set in; and the results were fully established by Bastgen for the resins of jalap and scammony, and by Daraszkiewitz for gamboge; while Schaur subsequently showed that resins in solution in bile at once acquired a certain degree of diffusibility.

All these observations, then, point to the general conclul sion that the purgative action of the resins is due to a locairritation produced by their substances after their solution in bile. This view receives full support from the interesting observations detailed by Dr. Kohler in the last part of Virchow's *Archiv*, who arrives at the conclusion that the irritant or drastic cathartics may be divided into two or three classes—namely: first, into those for the action of which bile is *not* essential, as aloes, croton oil, senna, and rhubarb; and secondly, those for which it is requisite that bile should be present, to act as a solvent and to promote the diffusibility. Of these, two sub-classes may be made; one including jalap, scammony, gamboge, and mushrooms, which, when dissolved, simply act as local irritants; the other, including the drastic cathartics of the cucurbitaceous order—elaterium, colocynth, and bryony, in which there is not only a local action of the dissolved resin, but a secondary one on the nervous system, after its absorption into the blood.—*Lancet.*

The Abortive Treatment of Pneumonia.—Dr. George Johnson, in a clinical lecture on this subject at King's College Hospital, in London, said: Now, I have a practical object in directing your attention to what I venture to call the physiology of pneumonia which is not of traumatic origin. A right appreciation of the disease may enable you to prevent or to greatly mitigate the pulmonary symptoms. If we can catch the disease in the stage of the initiatory fever before the exudation process has commenced, I believe it is possible to prevent the pulmonary mischief by favoring exudation through other channels. In a large proportion of cases the exciting cause of pneumonia is suppressed action of the skin by a chill or other unknown atmospheric influence, and the main object of treatment should be as early as possible to restore the free action of the skin. This may be done in various ways—by a warm-water or hot-air bath, by packing in a wet sheet and blankets, and by the diaphoretic action of repeated small doses of antimony or ipecacuanha, with or without opium. This diaphoretic treatment is often successful in arresting a catarrh, and it may be equally successful in preventing or mitigating pneumoniac exudation.

You will observe that vomiting and diarrhœa are among the symptoms which occur not unfrequently at the commencement of a febrile attack, which results soon in an inflammatory consolidation of the lung. We may take a hint from these phenomena, and assist in diverting mischief from the lung by an emetic or by a purgative dose of calomel and colocynth, followed by a saline.

The success of this abortive treatment of pneumonia depends mainly upon its early application. It is too late to attempt prevention when the lung tissue is already consolidated by inflammatory exudation. But, inasmuch as before the occurrence of the pulmonary symptoms the precise nature of the disease must be uncertain, the beneficial results of the treatment will remain doubtful in proportion to the completeness of its success. When the lung tissue has become consolidated by exudation there is no need for active treatment. Expectoration and absorption will in most cases more or less rapidly restore the lung to its normal condition. Pleuritic pain, when present, may be relieved by warm fomentations or poultices, or if severe by the application of three or four leeches. With reference to the pain of pleuro-pneumonia, let me give you one practical hint. The pain may be sharp at the onset of the diseases it may subside entirely when the lung is consolidated, and it may return with some severity when the physical signs indicate that the lung consolidation is passing away. The explanation I believe to be this: The pleurisy which complicates pneumonia is almost always dry pleurisy; there is lymph on the pleura covering the inflamed lung, but there is little or no serous effusion. The friction of the inflamed and roughened pleural surfaces increases the pain, the consolidation of the lung lessens lung and chest movement, thus friction and pain cease, to return when, with the passing away of the pulmonary consolidation, the lung and chest movements again become free.

You will often observe that with a return of the pleuritic pain there is a return of the friction-sound, which may have been audible during the early stage of pulmonary engorgement, but not during the stage of hepatization. In the case which I just now read to you the friction-sound was heard for the first time when the redux crepitation indicated that the lung consolidation was diminishing. Do not fall into the error of supposing that the redux pain and friction-sound indicate a fresh attack of pleuritic inflammation. Lastly, let me say that the case to which I have referred is one of many in which the hydrate of chloral has had a most beneficial influence in allaying delirious excitement and procuring sleep, without in any way impeding expectoration or the healing process in the lung.—*Medical Times and Gazette.*

Treatment of Croup. By DR. FABIUS, of Amsterdam.—Dr. F. never employs antimony, calomel, or bloodletting; for, as he says, "the chief object in treating croup is to avoid debilitating remedies as far as possible." Ipecac, is just as good an emetic as antimony; other purges are equally efficacious with calomel; bleedings are unnecessary. Of late years he has ceased to let blood in croup, and has been much more successful with his cases than formerly. An emetic, a warm poultice to the neck, and a large quantity of warm steam in the room, are his "abortive" measures. "In croup," he says, "this treatment brings relief; while in pseudo-croup it brings cure, or, as some say, it aborts croup."

If false membrane has actually formed, Dr. F. contends earnestly against the use of antiphlogistics. Antimony is abundantly proved to have been the frequent cause of sudden death in young children. Sulphate of copper is also rejected by Dr. F. He declines to speak of chlorate of potash, but ascribes more efficacy to carbonate of potash. Lusinsky, of Vienna, by whom the latter was employed extensively, claims to have saved by its means seventy-five cases of pure croup. Vogel, of Munich, gives it the preference over all other medicines; and Dr. Fabius says that he has had twelve successful and three unsuccessful cases under the use of this remedy alone; besides five successful ones where tracheotomy was performed. In doses of from ʒss to ʒij daily, diluted with water, it is not debilitating or dangerous. It should be noted that the carbonate—not the bicarbonate—is what is intended.

The effect desired of emetics is purely mechanical, to clear the air-passages. They may be repeated two or three times a day, so long as the stomach answers readily to the stimulus, and must be left off as soon as the act of vomiting seems no longer to relieve the respiration. Emetics, poultices, steam, and carbonate of potash, are his remedies until tracheotomy becomes needful. "We ought to operate when the disease is becoming worse, and the difficulty of breathing greater; when the anxiety begins to be permanent, and cannot be removed by emetics; when the scrobiculus cordis and the region above the clavicles are drawn in upon inspiration; when, finally, double pneumonia is not present, nor any other inevitably fatal condition, and when the strength is not too far gone." He advises care in avoiding bloodshed, rather than rapidity in operating; care, he says, "like that required in making an anatomical preparation."—*Journal fur Kinderkrankheiten, and Boston Medical and Surgical Journal*, February 17, 1870.

The Cincinnati Lancet and Observer says of Dr. Landon C. Rives, who died June 3, 1870, in that city, at the age of eighty years: "He was one of the great professional men of his time. He came from Philadelphia, where he studied medicine, to this city in 1830, and practiced up to 1857, when he retired from active life.

"He was one of the faculty in the Cincinnati College with Drs. Drake, Gross, Parker, Rogers, Harrison and McDowell, the most able and reputable association of medical professors the West ever had, and he stood with them and maintained his position with uniform honor and ability.

"Of that faculty there are only two now living, Drs. Gross and Parker. Dr. Rives subseqently occupied a chair in the Medical College of Ohio, and was distinguished for a large sympathy with the young men in the profession of medicine.

"He was social, genial in disposition, devoted to his profession, and left no stain upon the record of his long and honorable career as a physician."

MEDICAL NEWS.

"Nulla dies sine linea."

Photography applied to Cutaneous Medicine.—Late English journals mention an ingenious and valuable application of photography to the study of diseases of the skin. Mr. Squire, of London, has succeeded in photographing many forms of skin diseases, cases of complete alopecia, of alopecia arcata, lupus, psoriasis, eczema, syphilides, pedicularis, porrigo larvalis, and epithelial cancer. The photographs are done on glass, and colored as transparencies, with glazed colors. They are then used as slides for the magic lantern, and show double life size on the screen. The experiments made have been so far successful as to promise to assist greatly in removing the difficulties which have heretofore beset the student of cutaneous medicine.

The Toland Medical College, of San Francisco, has been merged into the University of California, and will hereafter be known and designated as the Medical Department of the University of California. By this change the property bequeathed to the school by Dr. Toland passes into the ownership of the Regents of the University. The school itself can not fail to be immensely benefited by this alliance with a university which promises to be one of the foremost in the country.

The "Brixton baby-farming" case came to a righteous conclusion on the 11th of October, in the hanging of the culprit, Margaret Waters. Readers of the London papers and medical journals are probably familiar with the wretched details of this woman's crimes, elicited during her trial. She confessed to having caused, by neglect and the administration of unsuitable food, the deaths of a number of illegitimate children committed to her charge.

Sir William Ferguson, Bart., has been elected to the presidency of the Royal College of Surgeons, London, thus breaking through the hitherto scrupulously observed practice of selecting no one but an Examiner of the College for this post. The precedent thus established is a good one, and meets with the general approval of the medical press.

The oldest practicing physician in America is Dr. Theophilus Clark, of Tenmouth, Vermont. He is ninety-eight years of age, has been practicing continuously sixty-six years, is hale and hearty, and has no thought of giving up business *yet*.

The *Medical Times and Gazette* quotes a report that, among the war preparations of Russia, a military commission has been appointed at St. Petersburg to create a medical reserve force of one thousand surgeons.

Mr. Hermann W. Newcomb, of this city, a matriculant of the Jefferson Medical College, died in Philadelphia on the 2d of November, a victim of too intense devotion to medical studies and scientific investigation.

Sir Thomas Watson has been appointed Physician-in-Ordinary to her Majesty, Queen Victoria, *vice* the late Sir James Clark.

Experiments on Vaccine Virus.—In the *Gazette Hebdomadaire* are described some experiments on vaccine lymph, which was collected in capillary tubes and the tubes sealed hermetically and exposed to a temperature of 170 degrees Fahrenheit for an hour and a half. On trial the virus proved to be active, and produced perfect pustules.

The late Dr. Auzias Turenne, it is said, gave directions in his will that his body should be dissected, and his skeleton cleaned, articulated, and hung up in the museum of the medical school at Christiania.

Manufacture of Spirits from Lichen.—Dr. Stahlschmidt (*Bayerisches Industrie und Gewerbe Blatt*) thus describes the process of making spirits from marine and terrestrial European lichens. The cellulose of the lichens or moss is converted into glucose by boiling with from 7 to 10 per cent. of the mass of hydrochloric acid (sp. gr. 1-165) by the aid of steam; the acid is saturated with chalk, and the saccharine matter brought to fermentation; 20 pounds of moss or lichen yield 5 litres of spirit at 50 per cent. anhydrous alcohol.

[NOTE.—Why can not the moss of the southern States be so utilized?—E. S. G.]

Medical Prescriptions.—The New York legislature has recently passed an act in reference to the compounding of physicians' prescriptions. By the terms of the law no apothecary is to permit any person in his employ to put up a prescription unless said person is a medical graduate, or has served an apprenticeship of two years in a drug store. Violations of the provisions of the act are to be deemed misdemeanors, and punished by a fine of $100, or imprisonment for six months in the county jail. If death ensue, the offense is to be deemed felony, and punished by a fine not less than $1,000 nor more than $5,000, and imprisonment in the State Prison for not less than two nor more than four years, or by both fine and imprisonment at the discretion of the court.—*Exchange.*

The *Medical Press and Circular* announces that Baboo Gopaul Chunder Roy, a learned Hindoo, will lecture in London on the History of Medicine, and that an address may also be expected from his cousin, Baboo Keshub Chunder Sen.

EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hor.

The Rearing and Education of Abandoned Children.—This is the title of one of the most entertaining, instructive and suggestive pamphlets that have been issued during the present year. It is prepared with great care, and is evidently the result of faithful labor. In its pages are tersely and well presented a mass of facts which ought to be in the possession of every philanthropist. There is, surely, no subject which presents itself with more absolute and increasing force to the reflecting mind of the present day, than that of the duty of protecting the helpless infants whom crime or poverty casts daily into the public cradle. Where philanthropy fails here to work out one of its blessed missions, duty comes forward to the task; and where these both fail, public necessity demands that this issue must be fully and successfully met. Now that the great majority of cities and towns are erecting, with lavish and noble generosity, beautiful and imposing asylums for abandoned children, it surely becomes a question of overwhelming importance to determine in what manner such work shall be so executed, that these edifices may become the foster-mothers, and not the tombs, of the helpless innocents who are consigned to them. With such views entertained by all, there can be nothing of more importance than reliable facts in this connection. The facts here presented will startle every one.

"The death-rate among children under two years of age, is twice as great within the most carefully tended establishments, as it is without the walls of these charities." The mortuary records of eleven European countries show a mortality during the first year of 20.85 per cent. (including still-births) among infants outside these Institutions, while within their walls the mortality is doubled, and is sometimes even tripled. "Of abandoned children coming under official care, the general death-rate ranges from 50 to 100 per cent."

In this country the results are no better. In the Nursery and Child's Hospital of New York, a model of architectural efficiency, sanitary care, matronly supervision and professional fidelity, the records show the most deplorable and terrible results. "In the former," (says the *New York Medical Gazette*, a most able and accurate authority,) "to which the children were admitted at the average age of four and a half months, the death-rate has been 40 deaths to 60 admissions, or even counting infants discharged after sixteen days' stay in the Institution, 50 per cent. of all inmates under two years of age." In this connection, Prof. Jacobi (the author of the pamphlet here mentioned and the distinguished physician of the New York Child's Hospital) states as follows:

> "It appears that the mortality of the nursery, if all of the admitted infants were new-born instead of being 4–5 months, would be so appalling that I am glad I am not required to state its exact figures. The worst figures of the European foundling hells of former centuries are not more fearful than ours, and although being an officer of that institution myself, and believing that I and all the rest of us have conscientiously tried to do our duties, I can not but testify and bow down to the truth, that in spite of all the efforts of the medical staff, and the painstaking of kind-hearted and self-sacrificing ladies, the probability of the lives of children intrusted to a public institution, is very slim indeed. The younger the children, and the larger the institution—the surer is death. Every story added to an edifice which is meant to be a temple of love, is an additional hecatomb of the innocents. Modern civilization, planning for the best, but mistaken about the means, has succeeded in out-Heroding Herod.

"Thus, the nursery, losing 36.5 children of 100 admitted at 4–5 months, would lose 73 of 100 admitted at birth, viz: more than 2½ times as many as the average deaths of new-born children before the end of their first year in the whole city of New York.

"At the Infants' Hospital the mortality rates do not look any more promising; on the contrary, they are worse in proportion to the poorer condition in which the infants are received, and the numerous and well-known drawbacks our institution is suffering from. Notwithstanding that the average age of admission is four months and fourteen days, thus excluding nearly two-thirds of the deaths usually occurring in the first year of infancy, the rate of decease in 1869 was 59.7 per cent., and even this is an improvement over former years."

The editor of the *New York Medical Gazette* thus comments on these terrible results:

"Such figures as these bear sadly conclusive evidence as to the worse than uselessness of philanthropic schemes which involve the aggregation of numerous inmates under the same roof; and yet the great question remains, What are we to do for the forlorn little waifs and strays of humanity that abound in all large cities? Means might, perhaps, be devised for improving the condition of infants cared for at home by even the poorest parents; but we should still have to provide for the multitude of illegitimate and abandoned children who are necessarily dependent on public charity for shelter. How this may be best accomplished is a matter of which the practical settlement lies in the future. One thing is clear; the crowding together of large numbers must be avoided, and separation practiced as far as possible. In France, the best results are obtained where children are distributed in country farm-houses for care; but there the system is under rigid governmental supervision, and the developments of 'baby-farming' in England show the frightful dangers of such a plan when exempted from authorative control. Under our republican institutions, it would be impracticable, even were it permissible, for the government to assume the direct management of affairs of this sort, and they must be left, as now, to private benevolence.

"We believe that the solution of the problem will ultimately be found in the adoption of the 'cottage system;' in the abandonment of large asylums and hospitals, and the erection, in their stead, of numerous small and inexpensive structures—little sanitary villages, so to speak—in the pure air beyond the city limits. The Cottage-Hospital at Ventnor, England has been found to work admirably in the case of sick adults, and we are convinced that a similar plan for the rearing of infants, under such careful management as that of the Nursery and Child's Hospital, would incalculably reduce the death-rate among the little ones taken in charge."

No one can read without absolute horror the facts that have been thus recently presented, and surely no one, professional or unprofessional, can avoid using his or her influence to bring such facts before all who are at present engaged in the erection of asylums for these unfortunate children. What a melancholy farce it is to term such places nurseries; and how essential it is to the honor as well as to the humanity of every community to take such immediate steps as shall remove these poor waifs from buildings that under the best management, are but ante-chambers to the courts of Death.

Canova's immortal marble, the Descent to the Tomb, brings, as it is said, tears to the eye of even the profligate and abandoned, yet how does this miracle of art sink into absolute insignificance, when compared with those myriad marble little forms which, in the dead-room of these modern asylums, appeal to the kindliness and sympathy of every true and affectionate heart. Surely they will not appeal in vain. Modern science is not powerless to help them, and modern philanthropy can not refuse to give to science the means of making this help sure and immediate. E. S. G.

In the following extract from the recent inaugural of Professor Samuel Henry Dickson, of the Jefferson Medical College, Philadelphia, Pa., the future policy of that school is clearly foreshadowed, if not officially announced:

"The list of Female Colleges has become a large one. Their classes are every session growing more numerous, and the reputed success of several regularly educated ladies as practitioners will doubtless crowd their lecture rooms. Far be it from me to deny or seek to limit their widest liberty of choice. I question neither their rights nor their capacities; they are fully able to fill most if not all the positions they seek to occupy; and it will be well for you hereafter if you do not find them too strong for you in the great battle of life. Meanwhile, however much we may regret, disapprove of and deprecate this lamentable misapplication of their eminent gifts and graces, they must receive at our hands all kindness and courtesy, every aid and facility; nothing being refused them but the worse than useless privilege they have so tenaciously contended for—the admission, namely, into the same rooms, at the same hours, with their brothers and cousins, their future lovers and husbands.

Another addition to the ranks of your competitors, as yet of little or no consequence, though not without importance in prospect, will be the access of colored physicians, whether of the tawny Chinese, such as may be met with in California, and at least in one instance as we are told in the city of New York, or from among our darker fellow-citizens of African descent. Many of these latter are now receiving an appropriate education, and will soon be prepared to enter the regular medical schools.

Some of the negro races are of very fair ability, and will learn readily whatever they are taught. Such are the Foulahs and the Mandingoes, the tribes of Congo and Mozambique. Hybrid of all grades, the mulatto, mestizo, quadroon, etc., and especially the more congenial hybrids formed by a cross between the better orders just named and the French and Scotch who mingle well with them, as they do with the Indians of our forests, ascend wonderfully in the scale of appreciativeness and general capacity. They are all ambitious and imitative, and will offer you no contemptible rivalry."

There are many thousands who will read what is thus presented with regret; for if, as is so clearly intimated, the course of the Jefferson College is to be such, as to extend to the negro the right of collegiate fellowship and actual association with the white race, no one would be regarded as rash who predicts that the result will be the irreparable injury, if not ruin, of that justly distinguished Institution. Certainly, that portion of the United States, which has, for so many years, furnished a large proportion of the classes in that school, will withdraw its support. What effects present and future political agencies may produce in the modes of thoughts and action of the Southern people, prophecy or speculation only will undertake to proclaim; but, certainly, the recent war and the political, personal, and pecuniary results springing therefrom, are too deeply impressed upon their minds and hearts for them to tolerate such association, or even its serious contemplation. That the Northern medical colleges must be the pioneers, if ever there be such a result as the collegiate association of the white and negro students, all will admit, but, whatever the future may bring of troubles and annoyances, it is not asking too much to request that the white medical student of the present generation, may be spared from a personal contamination, at the mere contemplation of which, his instincts and sensibilities rise up in perpetual arms. The day for this trial may come, but those who are calmly contemplating its dawn must not expect that it will be ushered in peacefully and welcomely, but in foreboding gloom, if not in actual storm. American colleges will, it is feared, seek to induce this repulsive association of the white and black races in their halls, but, at present, it is hoped that their Faculties will adopt, in their ethnological action, the classic motto of surgical manipulation, "*festina lente.*"

Few can contemplate such association without feelings of apprehension and repugnance. Collegiate association must lead to personal association; personal association becomes in time personal intercourse, and this can only end in personal intimacy. What personal intimacy produces all too well know; the result is familiar to all. Such intimacy is transferred from the public places of meeting to the fireside, and here spring up those feelings which end in the social relations of marriage and its results. In this case, the white race must be contaminated; its blood deteriorated; the moral, physical, and mental status of the offspring lowered and degraded. Physical achievements are diminished and mental aspiration becomes checked if not destroyed. Such a progeny is the incipient representative of an inferior population. A people thus stained loses its pride and power, its public glory and its place in the scale of nations. Stain the blood of a superior people by intermingling with it the blood of an inferior race, and the power of that people becomes sapped, its pride and glory pass forever away. This is no fancy sketch; it is no magnifying of evils and results; it is but giving in anticipation a true description of the picture which the future will present where ethnological amalgamation is effected. There is but one safeguard here, it is to oppose the commencement of such evils; *obsta principiis;* destroy the enemy upon the threshold, or be sure, if this is not done, that he will destroy you.

As to the admission of the "lady students," as they are termed, this is a piece of temporary folly which it is hoped will disappear with the rest of the social extravagances and extravaganzas, whose description soils the page of contemporaneous history. This subject will not, however, be again brought before the attention of the reader, for it has been already presented in another part of this volume. It is a gigantic nightmare which has oppressed every one. Each one suffers from it and bears it with all possible fortitude. Each one evades even a suggestion that may evoke the frightful picture of revolting enormities and feminine monstrosities. Royalty itself has succumbed under the influence of the frightful phantasm, and has, under its influence, granted privileges and rights with a recklessnes, suggestive either of mortal terror or superinduced imbecility.

E. S. G.

Outrage at a Woman's Medical College.—At Cleveland, during the present month, the body of a poor woman was carried to the Woman's Medical College, that the "lady students" might make a *post mortem* examination. This was, at least, the reason alleged by them for making the request, and they pledged "their honors" that, after this examination was made, the body of the unfortunate woman should receive decent burial.

An Episcopal clergyman was accordingly engaged, and, at the proper hour, the holy and beautiful burial rites of the Episcopal Church were performed. On reaching the cemetery, suspicion was aroused, from the fact that no grave had been prepared. The coffin was then opened and found to contain billets of wood. The body, the "lady students" had retained for their delectable entertainment! Apart from the revolting and repulsive enormities of such a scandalous transaction, and apart, also, from the abhorrent violations of a sacred pledge, how can any one, in terms sufficiently excoriating, denounce those who would thus deliberately have performed over a mass of wood, the most sacred and solemn rites known to man? Such appalling blasphemy is without precedent and beyond description. Where woman turns away from the beautiful field in which God has placed and man has ever welcomed her, how soon she becomes lost to every instinct which brings to her sex its tenderest blessings and its most engaging characteristics. How watchfully should she scrutinize the actions of those who thus degrade her, and how swift should she be to secure for them, after their unwomanly orgies, a sure and adequate retribution. If this is not done, if these "lady students" do not receive from their sex their proper punishment, soon the modern female will furnish a novel and melancholy translation to that classic aphorism, *propter uterum est mulier*, she is a woman—because she has a womb; but for no other reason.

E. S. G.

Gen. R. E. Lee.—The readers of this Journal are respectfully referred to the "letter" from Lexington, Va., published in the November number. In this letter will be found an interesting account of all the clinical facts in connection with the death of this great and good man.

Nothing has been so offensive to his old friends, as the manifestations surrounding the eulogies and funeral services offered to his memory. As a rule, those who were prominent on these occasions had only the desire to advertise themselves, and were in no respect fit persons for the positions they sought so eagerly to occupy. Here, there would be a line or staff officer, of whom no one (who had served in the army), had ever heard; there, there would be an advertising doctor, whose charlatan instinct is never satisfied, unless by the perpetual appearance of his name in the secular papers; here, there would be a municipal aspirant, who, like Talleyrand, had his baggage always ready to desert to another administration, when that which he served seemed to be in danger, etc. Most of these persons never saw or knew Lee; some of them were triflers in the cause which he loved; some were ostracised and placed in official coventry for their officiousness in regard to it; and some, after the war, had gladly returned home with blasted reputations, with mendacious accounts of careers represented by them to be distinguished, but known by others to be mortifying and contemptible. There were, of course, many distinguished exceptions to this rule; but in the main, it was the old story—the vultures clustering where the lion had fallen.

E. S. G.

The Richmond and Louisville Medical Journal for 1871.—After a long and painful period of enforced editorial leisure, the editor of this Journal has actively resumed his duties, and is making arrangements for an improvement in all departments of this work. A complete typographical outfit has been purchased by him during the present month, insuring, by this means, not only an entire change in the typography and mechanical execution of the Journal, but its prompt and accurate issue at the commencement of each month. So long as the Journal was published by others, there were many errors and delays which were unavoidable; but now that the Journal is to be published with type made expressly for it, and owned exclusively by the editor, the subscribers may feel assured that the troubles of which they had just cause for complaint will be terminated, and that the work will be published with every improvement possible, both in its literary and mechanical departments. Many had feared that disaster had befallen the Journal, on account of the delay in issuing the October and November numbers. The statement that has just been made is the best and most satisfactory reply possible.

The expenses attendant upon the publication of the Journal are very heavy, and, published as the work is, without capital, these expenses to be efficiently met, entail great labor and care upon the editor. The expenses inseparable from the arrangements recently made for the permanent improvement of the Journal, have added heavily to the ordinary expenses in the management of the work, and these facts, it is to be hoped, will be borne in mind by every friend and reader. Those who have desired and received indulgence this year, are respectfully asked to do the editor and themselves the justice of a prompt payment of their accounts, and, as the terms of the Journal must, for its welfare, be observed, all subscribers are earnestly asked, to forward in advance, the amount of subscription due for the next year.

The subscription list has largely increased during the past year, yet if any one desires to offer the most pleasing Christmas' or New Year's remembrance, let him send his own subscription fee and with it that of one or more of his friends. All can do this; who will decline doing so? Whether such remembrances, however, be received or not, the editor embraces this opportunity of thanking the supporters of this Journal for the literary and material strength which they have always given to it, and of offering to each reader those earnest wishes for his prosperous future, which kindliness suggests and custom sanctions at the CLOSE OF THE YEAR.

E. S. G.

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